

10.

ANNUAL REPORT

of the

State Board of Health

of

MARYLAND

for the

YEAR ENDING DECEMBER 31, 1912



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State Department of Health of Maryland, 1912.

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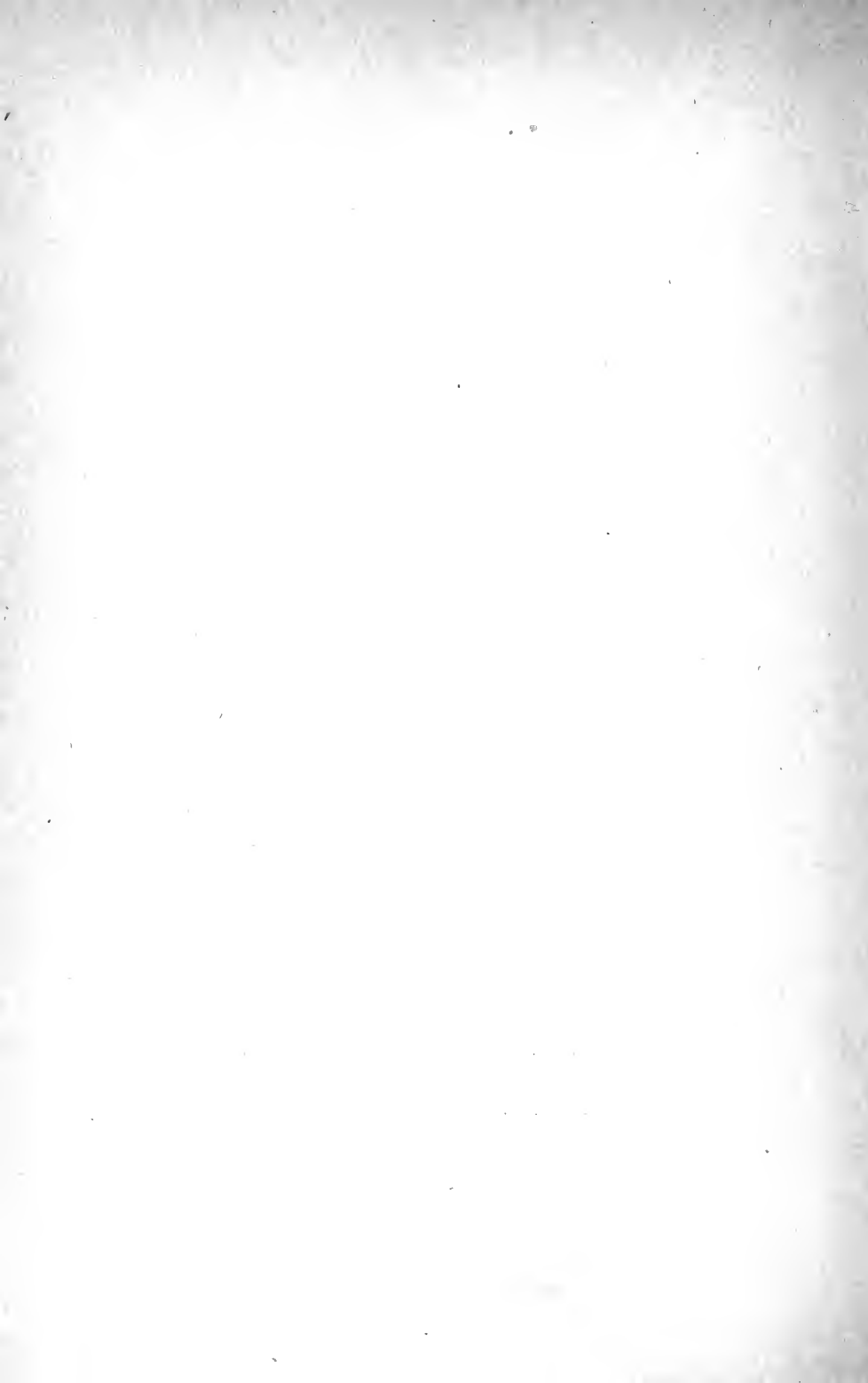
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PREFACE

October 31, 1913.

TO HIS EXCELLENCY,
PHILLIPS LEE GOLDSBOROUGH,
Governor of Maryland.

SIR:

I have the honor to transmit the report of the State Board of Health for the year 1912. The contents of the report are discussed at some length in the Secretary's letter of transmittal.

The year is a memorable one on account of the legislation which changed the form of organization to that of a department having several bureaus. The advantage of this change was very soon apparent, and no little significance is attributed to the fact that three of our bureaus received awards of merit in the exhibition held in connection with the International Congress on Hygiene and Demography at Washington in September, 1912.

The recent General Assembly did not pass the legislation proposed by us for the reorganization of county boards of health. It seems likely that the State Board of Health will propose new legislation on somewhat similar lines at the next session. The movement of public health legislation in recent years has been strongly toward centralization of authority. There is now much experience tending to show that local health administration is more efficient when under regular supervision and some direct control of a central authority of the State. The next step seems to be the employment of a sufficient number of fairly paid, full time, local health officers. Since it is not likely that we should be able, within a few years, to secure the services of well qualified men to the number required, the change would be somewhat slow, and would present no aspect of revolution, nor of rapid increase in cost.

The resignation of Dr. Marshall Langton Price as secretary to the Board was accepted at the January (1913) meeting. He had been in failing health for several months and presented his resignation some two months before the date of its acceptance. The members of the Board, in accepting his resignation,

placed on record their sense of appreciation of his valuable services to the Board and to the State. The Board was fortunate in securing as successor to Dr. Price, Dr. John S. Fulton, who was secretary between the years 1897 and 1907, and had served most efficiently in this position up to the time of his withdrawal to undertake the great work of organizing first the International Congress of Tuberculosis, and following this, the International Congress of Hygiene and Demography. He returns to us with an added reputation and experience, which will increase still further his powers of usefulness in promoting the health of the people of the State.

Most respectfully yours,

WM. H. WELCH,
President.

LETTER OF TRANSMITTAL

October 31, 1913.

TO HIS EXCELLENCY,
PHILLIPS LEE GOLDSBOROUGH,
Governor of Maryland.

SIR:

In accordance with the provisions of Sections 5 and 6 of Article 43 of the Code of Public General Laws of Maryland, I transmit herewith the report of the State Department of Health for the year 1912.

The report begins with the work of the Bureau of Vital Statistics, and shows that good results may be expected from the new registration law which became effective on July 1st, 1912. An appreciable improvement is noted, especially in the registration of births, during the second half year, and at this writing (October 31st, 1913) we have reason to believe that the State of Maryland, within a year, will be admitted by the Census Bureau to the United States Registration Area for Births. Admission to the Registration Area means that the Census Bureau believes the registration within the State to lack no more than 10 per cent. of completeness. To be counted as a registration State will not, therefore, satisfy the purpose of the State, as expressed in the registration law. Maryland has been in the registration area for deaths for the past eight or nine years, but the mortality is not fully accounted for in some counties, notably in St. Mary's and Garrett. In each of these counties the local registration offices have been taken over by the State Board of Health and operated for a time at the expense of the county. These two counties have thus incurred expense much in excess of the cost of the proper operation by their own agents, but both counties relapsed very rapidly within a short time after the withdrawal of the State. Our intervention showed that Garrett and St. Mary's Counties did not record, previous to that intervention, more than one-sixth or one-seventh of the deaths occurring. It is evident that the registration of both births and deaths, like other public health undertakings, will fall short of the intention and pur-

pose of existing laws until the local offices are regularly supervised by the central sanitary authority of the State. These memoranda of current gain and loss in population, together with the reports of current sickness, must be brought to a state approximating perfection, before it can be claimed that the other machinery of public hygiene is operated under favorable conditions or at a high rate of efficiency.

POPULATION.

Since the last report we are able to correct our population figures by means of the census returns, and so to compute more reliable rates of mortality than those published for the preceding three or four years. Five counties declined in population during the decade of 1900-1910—Cecil, Charles, Kent, Queen Anne's and Talbot. The colored population declined in 18 counties. In Baltimore City, and in the counties of Baltimore, Caroline, Somerset, Wicomico and Worcester, the colored population increased. For the whole State, there was a loss of colored population. The loss is doubtless due chiefly to the migration of colored people. The movement is from the rural districts to the cities, and the State as a whole sustains an annual net loss of about 300 colored persons. One consequence of this loss is apt to be overlooked. The diminishing proportion of the colored element of population, if it continues, will cause a diminution of our annual mortality rates; and some persons may attribute to improved sanitary conditions those improvements in current mortality which are wholly or partly due to diminishing numbers in that part of the population which suffers the higher death rate.

MARYLAND DEATH RATES.

The death rate for all Maryland in 1912 was 15.64 per 1,000 (mortality, 20,597; population, 1,316,806). For Baltimore City, the death rate was 18.37 per 1,000 (mortality, 10,441; population, 568,391). For Maryland, outside of Baltimore, the death rate was 13.57 per 1,000 (mortality, 10,156; population, 748,415). The death rate (13.57) is higher than that for 1911 (13.30), and the latter in turn was higher than the death rate for 1910 (13.14). Let no one be deceived into believing that the death rate is as low as 13.57 in any part of Maryland. It can be said with confidence that the registration of deaths was incomplete in every county where the apparent death rate is under 13.57.

In examining the particulars of mortality, it is pleasant to record a small drop in the mortality from pulmonary and laryngeal tuberculosis.

The tuberculosis mortality per 10,000 of population, for each of the past 6 years, is shown in the following table:

1907.....	17.97
1908.....	17.42
1909.....	17.68
1910.....	17.55
1911.....	17.01
1912.....	16.54

The downward tendency should encourage us to believe that the admirable legislation of 1902 and 1904 is now bearing fruit. We cannot be over-confident, however, for a doubt must be reserved on account of those communities which take no pains to record their losses, and do not concern themselves about the unnecessary deaths of unimportant citizens, from a familiar disease like tuberculosis. Since the population of the State has increased each year, while the absolute mortality from tuberculosis has decreased, it seems unlikely that we can be much deluded by the apparent decline. We may indeed anticipate that when ampler experience is at hand, the decline will be found to have occurred mostly in those localities where the laws are best administered, and that the situation in such localities is much better than that indicated by the tuberculosis rate for all Maryland.

The typhoid fever mortality of Maryland is discussed in an interesting way in the report of the Bureau of Sanitary Engineering. This history of typhoid in Maryland continues to be a reproach to us. We are not found in unfavorable contrast with a majority of the United States, but we are far behind certain commonwealths whose advantages in this respect are mainly those which legislatures can provide.

MORBIDITY.

One of the most interesting signs of progress noted by the present writer, on his return to service in Maryland, is the much greater volume of information recorded in the Bureau of Infectious Diseases concerning current morbidity from the notifiable diseases. One still finds that some physicians are guilty of unwarrantable delay in making their reports, and

that when brought to Court on charges of neglect, they frequently escape on the plea that they failed to make the diagnosis with that degree of confidence which amounts to knowledge, but it seems unlikely that such physicians will repeatedly plead infirmity of diagnosis in such cases.

The records improve from year to year, in number, promptness and accuracy. They are now received in sufficient numbers to be highly useful in the general study of epidemiology, but often the information is not received early enough to meet the cardinal purpose of the law, namely, prompt intervention. When to the occasional tardiness of practicing physicians one adds occasional tardiness on the part of local health officers, it is clear that the operation of the law may be much slower than is required for the prompt and orderly protection of public health. We have made, at this time, about as good progress as can be made in the absence of a centralized control over local health authorities.

FOOD AND DRUGS.

The report of the Commissioner of Food and Drugs shows that the laws on this subject are now in full operation. Unusual tact and intelligence have been exercised in bringing the laws to this status. It will be seen that the food laws are more effectively administered in the counties than in Baltimore City. The Commissioner calls attention to the great delay encountered in the office of the State's Attorney for Baltimore City. This is a chronic difficulty of very long duration. The State's Attorney's office is far undermanned, and the results are apparent not only in long delays, but sometimes in the preparation of cases.

The Commissioner calls attention to the need of a sanitary inspection law. The examinations of places where food is prepared at present relate only to the quality of the products. Establishments may present conditions unfavorable to the health of employees, or conditions of nuisance to the surrounding population, but in such situations, the Commissioner cannot require any amendment beyond such as meet the conditions under which a marketable food is produced.

SANITARY ENGINEERING.

The addition of a Bureau of Sanitary Engineering has greatly increased the efficiency of the Department of Health. In the few months of its existence, this bureau has not only

done a surprising amount of work, but has given us a view of future great utility. An examination of the report will show how very significant is the first half year of its existence.

In concluding this letter, I should record my sense of the loss to public hygiene, especially in Maryland, which is involved in the declining health and consequent retirement of Dr. Marshall Langton Price, Secretary of the Board since 1907, and previous to 1907, Medical Assistant to the Secretary. Dr. Price became the executive officer of the Board at a critical time, and the results of his five and three-quarters years of service should afford gratification to him, as they were certainly profitable to the State. If the progress of the Department of Health in the next five years is such as should follow the years of Dr. Price's incumbency, there is strong probability that the value of his services may become obscured, and even, by many, forgotten. Such permanency as a printed record can secure, should include mention of his services as Secretary to the first Maryland Tuberculosis Commission; the authorship of the Maryland law for the registration of tuberculosis, and of the law for the domestic prophylaxis of tuberculosis; the organization of the Maryland Tuberculosis Exposition in 1904, the first attempt in America to study the tuberculosis problem in a broad way, with attendant widespread effect upon the public intelligence, and leading to a nation-wide adoption of this method of educating the general public in matters of hygiene. These things, with the great development of the State Department of Health which occurred between the years 1907 and 1913, should be indissolubly associated with the name of Dr. Price.

Most respectfully submitted.

JOHN S. FULTON,

Secretary.



RESOLUTION

(ADOPTED BY STATE BOARD OF HEALTH, JANUARY 16, 1913.)

The State Board of Health in accepting the resignation of Dr. Marshall L. Price as Secretary and Executive Officer of the Board, desires to place on record its sincere regret that the state of his health has compelled his resignation, and its sense of the great loss suffered by the Board by his retirement from the responsible office which he has filled with unusual ability, devotion and satisfaction to the Board and to the public for nearly six years, having previously served for three years as medical assistant.

The Board desires to record its high appreciation of the valuable services which Dr. Price has rendered to the people of this State in improving the organization and strengthening, expanding and rendering more efficient the work of the State Board of Health and in furthering by word and action many movements and efforts to promote the health interests of the State.



VITAL STATISTICS, 1912.

The word statistic is derived from the Latin "status," which, in the middle ages, had become to mean "state" in a political sense. Statistic, therefore, originally denoted inquires into the condition of a State. Since the 18th Century the denotation of the word has been extended, while at the same time its scope has become more defined and may now be said for all practical purposes to be fixed. The use of the word statistics has been credited to G. Aschenwall, but the word in its modern sense did not really come into existence until the publication (1761) of the work of J. P. Sussmilch, a Prussian clergyman, in which work he made a systematic attempt to make use of all classes of facts which had up to that time been regarded as belonging to "political mathematics."

The facts derived through the science of statistics are now used as the basis of transactions in all well regulated governments. Governmental statistics in many of its branches have been closely collected, and the data gathered therefrom of inestimable value. The branch of governmental statistics, which is, perhaps, of greatest value to the State, is that branch known as vital statistics. This branch of statistics may be defined "as the science of numbers applied to the life history of communities and nations."

To properly compile and make deductions from vital statistics, they must be considered under three heads:

1. *The Birth Rate.*
2. *The Death Rate.*
3. *The Duration of Life.*

The result obtained by the proper compilation of these figures is the basis for all public health measures, and are always used as a means to measure the efficiency of various sanitary and hygienic measures, which are from time to time instituted in any community or State. To be able, from year to year, to make the proper comparative statements regarding the status of the health of the State, it is necessary to formulate tables

with the least possible error, and to make similar tables over a period of years. There is undoubtedly a fair chance of error, not in the mathematics of these tables, but in the interpretation of the result, unless the raw material for such tables is classified by the interpreter.

The efforts of Boards of Health and sanitarians are directed, therefore, toward increasing the birth rate, diminishing the death rate and increasing the duration of life. As a basis upon which to direct their efforts in the State of Maryland, the tables contained within this report have been devised. All the earlier tables will be maintained and others added thereto from time to time, when statistics relative to various points of interest shall be needed.

As a basis of comparison, all vital statisticians use the census figures of the population. The figures for census years, of course, are most valuable, since they give the actual number of individuals. In inter-census years, in order to add accuracy to the tables in this report, the population is computed by the arithmetic method.

The return mortality in Maryland probably now constitutes over 93% of the total deaths. The reported births probably fall under 85% of the actual births. Maryland statistics show in this respect the deficiency existing in the majority of the American States in the registration of births.

The total deaths registered in Maryland during 1912 were, for the rural districts, 10,156; in Baltimore City, 10,441; making a total for the State of 20,597.

The total births reported for the same year from the rural districts were 13,229; for Baltimore City, 11,398; making a total for the State of 24,627, giving an apparent increase in the population of the State of 4,030.

The figures for Maryland during 1911 were: Births, 19,844; deaths, 20,290, a decrease of 446. These figures show an increase in the birth registration of 4,783.

The rates for births, deaths, increase or decrease in 1912 were all calculated from the estimated population for 1912, the actual figures of population being available only for the census year 1910.

METHOD OF ESTIMATING POPULATION IN THE INTER-CENSUS YEARS.

This Department has been for a number of years calculating the population for the inter-census years by the geometric method. After comparing the results obtained by the geometric method and those by the arithmetic method it is evident that for a State with a rather slow increase of population like this State, the best possible results can be obtained by the arithmetic method, particularly in the last quinquennial period of the inter-census years.

Beside this, the arithmetic method has been recommended by the American Public Health Association and is also used by the Census Bureau and for these reasons the same method has been adopted by a number of registration States and for the sake of the value of uniformity, if for no other reason, this method should be adopted by all registration States.

In the arithmetic method the absolute increase for the 10 years intervening between the last two censuses is divided by 10 and this number added to each succeeding year following the last census.

Let P = population at census preceding last census.

P' = population at last census.

P'' = increment for last inter-census years.

$\frac{P''}{10}$ = increment for 1 year.

Then $\frac{P''}{10} \times 1$ = increase for 1 year (1911).

$\frac{P''}{10} \times 2$ = increase for 2 years (1912).

$\frac{P''}{10} \times 3$ = increase for 3 years (1913).

$\frac{P''}{10} \times 10$ = increase for 10 years (1920).

RATE OF INCREASE OF POPULATION OF MARYLAND—1912.

$$P' = 1295346$$

$$P = 1188044$$

$$P'' = 107302$$

$$\therefore \text{Increase for 1912} = \frac{P''}{10} \times 2 = \frac{107302}{10} \times 2 = 21460.4.$$

RURAL DISTRICTS.

$$P' = 736861$$

$$P = 679087$$

$$P'' = 57774$$

$$\therefore \text{Increase for 1912} = \frac{P''}{10} \times 2 = \frac{57774}{10} \times 2 = 11554.8.$$

BALTIMORE CITY.

$$P' = 558485$$

$$P = 508957$$

$$P'' = 49528$$

$$\therefore \text{Increase for 1912} = \frac{P''}{10} \times 2 = \frac{49528}{10} \times 2 = 9905.6.$$

The increment for any fixed portion of the population may be worked out in a similar manner, and in order to make these figures as accurate as possible and in order to aid such persons who desire them the increment for the male, female, white and colored populations for Maryland, Baltimore City, and the Rural Districts are given in Table I.

POPULATION OF MARYLAND—1912.

The population of Maryland is given in Table I for the male, female, white and colored population of Baltimore City, Rural Maryland and the State of Maryland.

The estimated population, white and colored for the counties appears in Table I-A. The estimated population by ages, without distinction of sex or color, appears in Table XIII.

TABLE I.

ESTIMATED POPULATION IN MARYLAND FOR THE YEAR 1912.

Maryland.	<i>Population.</i>	<i>Yearly Increment.</i>
Total population.....	1,316,806	+10,730.2
White.....	1,084,682	+11,021.5
Colored.....	232,124	—291.3
Male.....	655,215	+5,495.0
Female.....	661,591	+5,235.2
Baltimore City.		
Total population.....	568,391	+4,952.8
White.....	482,221	+4,416.9
Colored.....	86,170	+535.9
Rural Districts.		
Total population.....	748,415	+5,777.4
White.....	602,461	+6,604.6
Colored.....	145,954	—827.2

	<i>White. Population.</i>	<i>Yearly Increment.</i>	<i>Colored. Population.</i>	<i>Yearly Increment.</i>
Maryland.				
Males.....	540,263	+5,595.3	114,952	—100.3
Females.....	544,419	+5,426.2	117,172	—191.0
Baltimore City.				
Males.....	233,030	+2,106.9	40,148	+384.6
Females.....	249,191	+2,310.0	46,022	+151.3
Rural Districts.				
Males.....	307,233	+3,488.4	74,804	—484.9
Females.....	295,228	+3,116.2	71,150	—342.3

TABLE I-A.

ESTIMATED POPULATION FOR THE COUNTIES OF MARYLAND FOR THE YEAR 1912.

	<i>White.</i>		<i>Colored.</i>		<i>Total.</i>
	<i>Population.</i>	<i>Increment.</i>	<i>Population.</i>	<i>Increment.</i>	
Allegany.....	62,668	+887.4	1,487	—15.7	64,155
Anne Arundel.....	25,668	+116.0	13,912	—122.7	39,540
Baltimore.....	115,855	+3,061.0	12,813	+98.4	128,668
Calvert.....	5,316	+19.7	5,027	—09.7	10,343
Caroline.....	14,911	+241.8	4,899	+55.0	19,810
Carroll.....	31,962	+20.4	1,987	—13.0	33,949
Cecil.....	20,340	—42.5	3,238	—47.8	23,578
Charles.....	7,773	—20.1	8,358	—107.5	16,131
Dorchester.....	19,401	+77.1	9,409	—06.4	28,810
Frederick.....	47,545	+136.7	5,278	—61.4	52,823
Garrett.....	20,483	+242.3	103	—01.9	20,586
Harford.....	22,937	+43.8	4,968	—74.2	27,905
Howard.....	12,337	+02.3	3,648	—63.2	15,985
Kent.....	10,685	—54.8	5,906	—128.1	16,591
Montgomery.....	23,338	+245.4	9,080	—81.5	32,418
Prince George's.....	25,991	+673.4	11,407	—48.4	37,398
Queen Anne's.....	10,829	—96.8	5,705	—55.7	16,534
Somerset.....	17,096	+59.1	6,857	—223.2	23,953
St. Mary's.....	9,886	+80.0	9,721	+122.1	19,607
Talbot.....	12,834	—03.4	6,641	—68.8	19,475
Washington.....	48,468	+485.5	2,045	—37.1	50,513
Wicomico.....	21,200	+348.1	6,407	+48.2	27,607
Worcester.....	14,978	+82.2	7,058	+15.4	22,036
Total for Counties..	602,461	+6,604.6	145,954	—827.2	748,415
Baltimore City.....	482,221	+4,416.9	86,170	+535.9	568,391
Total for Maryland.	1,084,682	+11,021.5	232,124	—291.3	1,316,806

BIRTHS IN MARYLAND.

The total number of births recorded in the State of Maryland during 1912, was 24,627, of which 13,229 were reported from the rural districts, and 11,398 from Baltimore City.

The total number of white births reported was 20,103. The total number of colored births reported was 4,524.

The total number of male births, 12,876; of female births, 11,751.

In Table II, the births, deaths and increase are given by counties for the whole population, white and colored races; also the birth rate, death rate, and rate of increase per 1,000 of the population (as estimated from the United States Census figures for 1910). This table also gives the population of the counties (total white and colored) for 1912.

TABLE II.

BIRTH RATES, DEATH RATES, AND RATE OF INCREASE—1912.

<i>Counties.</i>	<i>White.</i>			<i>Colored.</i>			<i>Whole Population.</i>		
	<i>Births</i>	<i>Deaths</i>	<i>Inc. or Dec.</i>	<i>Births</i>	<i>Deaths</i>	<i>Inc. or Dec.</i>	<i>Births</i>	<i>Deaths</i>	<i>Inc. or Dec.</i>
	<i>Per 1,000.</i>	<i>Per 1,000.</i>	<i>1,000.</i>	<i>Per 1,000.</i>	<i>Per 1,000.</i>	<i>1,000.</i>	<i>Per 1,000.</i>	<i>Per 1,000.</i>	<i>Per 1,000.</i>
Allegany.....	22.45	10.80	+11.33	28.24	30.26	-2.02	22.58	11.57	+11.02
Anne Arundel.....	22.87	13.46	+9.01	18.55	27.89	-9.27	21.11	18.80	+2.58
Baltimore.....	14.72	13.19	+1.52	12.96	17.01	-4.05	14.84	13.85	+ .99
Calvert.....	25.90	7.15	+18.81	25.64	13.72	+11.93	25.80	10.35	+15.47
Caroline.....	13.21	10.59	+2.62	10.82	17.76	-6.94	12.62	12.37	+ .25
Carroll.....	15.71	13.48	+2.22	17.11	16.10	+1.01	15.79	13.67	+2.15
Cecil.....	15.19	13.67	+1.52	11.73	22.85	-11.11	14.72	14.92	- .21
Charles.....	25.34	9.91	+15.45	26.92	18.07	+8.85	26.16	14.07	+12.03
Dorchester.....	19.84	13.20	+6.65	22.21	24.87	-2.66	20.62	17.01	+3.61
Frederick.....	16.59	13.65	+2.92	17.05	23.68	-6.63	16.64	14.63	+1.98
Garrett.....	20.75	9.07	+11.67	19.42	29.13	-9.71	20.74	9.18	+11.56
Harford.....	12.25	12.82	- .57	8.86	24.15	-15.30	11.64	14.83	-3.79
Howard.....	18.64	10.63	+7.94	24.67	19.19	+5.21	19.95	12.64	+7.33
Kent.....	15.63	14.51	+1.12	15.58	24.38	-8.80	15.67	18.02	-2.41
Montgomery.....	16.12	7.97	+8.13	15.42	12.89	+2.53	15.61	9.35	+6.57
Prince George's.....	22.35	10.00	+12.43	23.14	15.69	+7.45	21.44	11.74	+9.71
Queen Anne's.....	18.10	15.33	+1.85	16.83	22.61	-5.78	17.66	17.84	- .18
Somerset.....	17.72	11.46	+6.26	24.06	26.00	-1.93	19.54	15.61	+3.92
St. Mary's.....	13.86	5.96	+7.89	6.69	4.94	+1.75	10.30	5.47	+4.85
Talbot.....	14.57	11.67	+2.88	11.75	20.32	-8.58	13.61	14.63	-1.03
Washington.....	22.92	13.84	+9.08	19.51	26.40	-6.85	22.79	14.35	+8.43
Wicomico.....	13.77	10.47	+3.30	7.65	13.27	-5.62	12.35	11.12	+1.23
Worcester.....	14.62	11.68	+2.94	20.40	16.44	+3.97	16.47	13.21	+3.27
Baltimore City.....	19.47	16.28	+3.18	23.34	30.05	-6.70	20.05	18.36	+1.69

TABLE II—Continued.
BIRTHS, DEATHS AND INCREASE OF POPULATION.

County.	White.			Colored.			Whole Population.		
	Births.	Deaths.	Inc. or Dec.	Births.	Deaths.	Inc. or Dec.	Births.	Deaths.	Inc. or Dec.
Allegheny.....	1,407	697	+710	42	45	-3	1,449	742	+707
Anne Arundel.....	586	355	+231	259	388	-129	845	743	+102
Baltimore.....	1,744	1,564	+180	143	218	-52	1,910	1,782	+128
Calvert.....	138	38	+100	129	69	+60	267	107	+160
Caroline.....	197	158	+39	53	87	-34	250	245	+5
Carroll.....	502	431	+71	34	32	+2	536	463	+73
Cecil.....	309	278	+31	38	74	-36	347	352	-5
Charles.....	197	77	+120	225	151	+74	422	228	+194
Dorchester.....	385	256	+129	209	234	-25	594	490	+104
Frederick.....	789	649	+140	90	125	-35	879	774	+105
Garrett.....	425	186	+239	2	3	-1	427	189	+238
Harford.....	281	294	-13	44	120	-76	325	414	-89
Howard.....	230	132	+98	89	70	+19	319	202	+117
Kent.....	167	155	+12	92	144	-52	259	299	-40
Montgomery.....	376	186	+190	140	117	+23	516	303	+213
Prince George's.....	583	260	+323	264	179	+85	802	439	+363
Queen Anne's.....	196	166	+30	96	129	-33	292	265	+3
Somerset.....	303	196	+107	165	178	-13	468	374	+94
St. Mary's.....	137	59	+78	65	48	+17	202	107	+95
Talbot.....	187	150	+37	78	135	-57	265	285	-20
Washington.....	1,111	671	+440	40	54	-14	1,151	725	+426
Wicomico.....	292	232	+70	49	85	-36	341	307	+34
Worcester.....	219	175	+44	144	116	+28	363	291	+72
Baltimore City.....	9,387	7,832	+1,535	2,011	2,589	-578	11,398	10,441	+957

By reference to the part of the table dealing with birth rates, death rates and rates of increase per thousand, on page 8, a comparison may be made of the efficiency of registration in the various counties of Maryland. The total English birth rate, legitimate and illegitimate, averaged 32.6 per thousand of population in 1841 to 1850. In 1896 it was 29.7. The lowest birth rate in English counties in 1895 was, in Sussex, 24.3. In Part 1, of Section 3, of the United States Census Report on Vital Statistics for 1901, Volume 3, the birth rate of the United States for ten years was calculated at 31.5. For England and Wales, 30.1; for Germany, 36.2; for France, 22.2; and for Switzerland, 27.7. The birth rates of the United States are generally acknowledged to be higher than most European countries. The national death rate per thousand, as calculated by Dr. Ogle in 1881, was: For England and Wales, 18.88; Austria, 18.82; Switzerland, 19.38; Germany, 19.21; Holland, 20.81; France, 21.31; and Italy, 19.33. The general death rate for the United States during the ten years specified, was 17.4. The birth rate given by the United States Census for Maryland, in 1890, was 26.0. It can be assumed for Maryland that a birth rate of under 20 indicates deficient returns, and a birth rate of under 15 markedly defective returns, while a birth rate of below 10 indicates very bad returns. In classifying the counties according to this standard, we find 8 counties in 1912 which return birth rates of over 20; they are Allegany, Anne Arundel, Calvert, Charles, Dorchester, Garrett, Prince George's and Washington. Births from these counties can be classified as good. This is an encouraging birth rate to find in a number of counties. There have been very few counties in Maryland giving a birth rate of over 20 in the past five years. Those having defective returns between 20 and 15 per thousand are: Carroll, Frederick, Howard, Kent, Montgomery, Queen Anne's, Somerset and Worcester. Counties having markedly defective returns, the birth rates being between 15 and 10 per thousand are: Baltimore, Cecil, Caroline, Harford, St. Mary's, Talbot and Wicomico.

The death rate in Maryland counties should not fall below 17, though for the purpose of comparison a minimum of 15

may be adopted. Counties giving good returns on this classification are: Anne Arundel, Dorchester, Queen Anne's and Somerset. The remaining counties in the State show more or less defective returns, the returns from these counties ranging between 15 and 10 per 1,000. The largest excess of recorded births over deaths is in Calvert county, 15.47; the next in order is Charles, with 12.03. Prior to the year 1912 a large number of counties showed an excess of deaths over births. This year there are only four counties that show an excess of deaths over births: Cecil, Harford, Kent and Queen Anne's. The highest excess of births over deaths in the white population is 18.81 per thousand in Calvert county, and the only deficit in the white population is $-.57$ per thousand, in Harford county. The maximum excess of births over deaths among the colored population occurs in Calvert county, $+11.93$ per thousand. The greatest colored deficit in births is in Harford county, -15.30 per thousand.

Table III gives a summary of the births, birth rates, deaths, death rates and excess of births over deaths per thousand, among males, females, white and colored, for the rural districts, Baltimore and the State of Maryland.

It will be noticed in this table that both the birth and death rates are higher in the colored race. The death rate is proportionately so much higher that the apparent rate of increase is much less in the colored race than in the white.

All birth returns may be assumed to be defective in which the total births do not exceed the total deaths, excepting under unusual circumstances.

TABLE III.

BIRTHS AND DEATHS IN MARYLAND (1912)—Summary.

<i>Births.</i>	<i>Male.</i>	<i>Female.</i>	<i>White.</i>	<i>Colored.</i>	<i>Total.</i>
Rural Districts.....	6,941	6,288	10,716	2,513	13,229
Baltimore City.....	5,935	5,463	9,387	2,011	11,389
Maryland.....	12,876	11,751	20,103	4,524	24,627
<i>Birth Rate.</i>					
Rural Districts.....	9.27	8.40	14.32	3.35	17.67
Baltimore City.....	10.44	9.61	16.51	3.54	20.05
Maryland.....	9.78	8.92	15.26	3.44	18.70
<i>Deaths.</i>					
Rural Districts.....	5,428	4,728	7,355	2,801	10,156
Baltimore City.....	5,552	4,889	7,852	2,589	10,441
Maryland.....	10,980	9,617	9,944	10,653	20,597
<i>Death Rate.</i>					
Rural Districts.....	7.25	6.32	9.83	3.74	13.57
Baltimore City.....	9.76	8.60	13.81	4.55	18.36
Maryland.....	8.34	7.30	7.55	8.09	15.64
<i>The Difference Between Death Rate and Birth Rate Per 1,000.</i>					
Rural Districts.....	+2.02	+2.08	+4.49	—0.39	+4.10
Baltimore City.....	+0.68	+1.01	+2.70	—1.01	+1.69
Maryland.....	+1.44	+1.62	+7.71	—4.65	+3.06

The succeeding tables (Tables IV and V) give births and still-births for the rural districts of Maryland and Baltimore City.

For the State there were registered in 1912, 24,627 living births, and 1,485 still-births, a proportion of 6.03 per cent. of all births still-born.

In Table IV the male and female births are given by months, with the corresponding months of conception, dating nine months previously.

The greatest number of living births in the rural districts was recorded in August (1415), the corresponding period of conception being the month of November.

During 1911 the maximum number of births occurred during the month of July (949).

The highest figures next in order were for the months of October (1306) and September (1303), corresponding to the months of conception of January and December.

The minimum number of births during 1912 occurred in April (831). During 1911, November furnished the minimum number of births.

The greatest number of male births occurred in August (713). The greatest number during 1911 occurred in September (513). The greatest number of female births occurred in August (702). The greatest number in 1911 occurred in January. The male births exceed the female births in every month. It is rather unusual for the female births not to exceed the male births at least in one month. Previous reports for a number of years in this State have never failed to show an excess of female births over male births in one month during the year.

Table V (still-births) shows particularly no seasonal variation, the fluctuation being proportionate only to the number of total births.

Births, male, female and total, appear in Chart I, page 14.

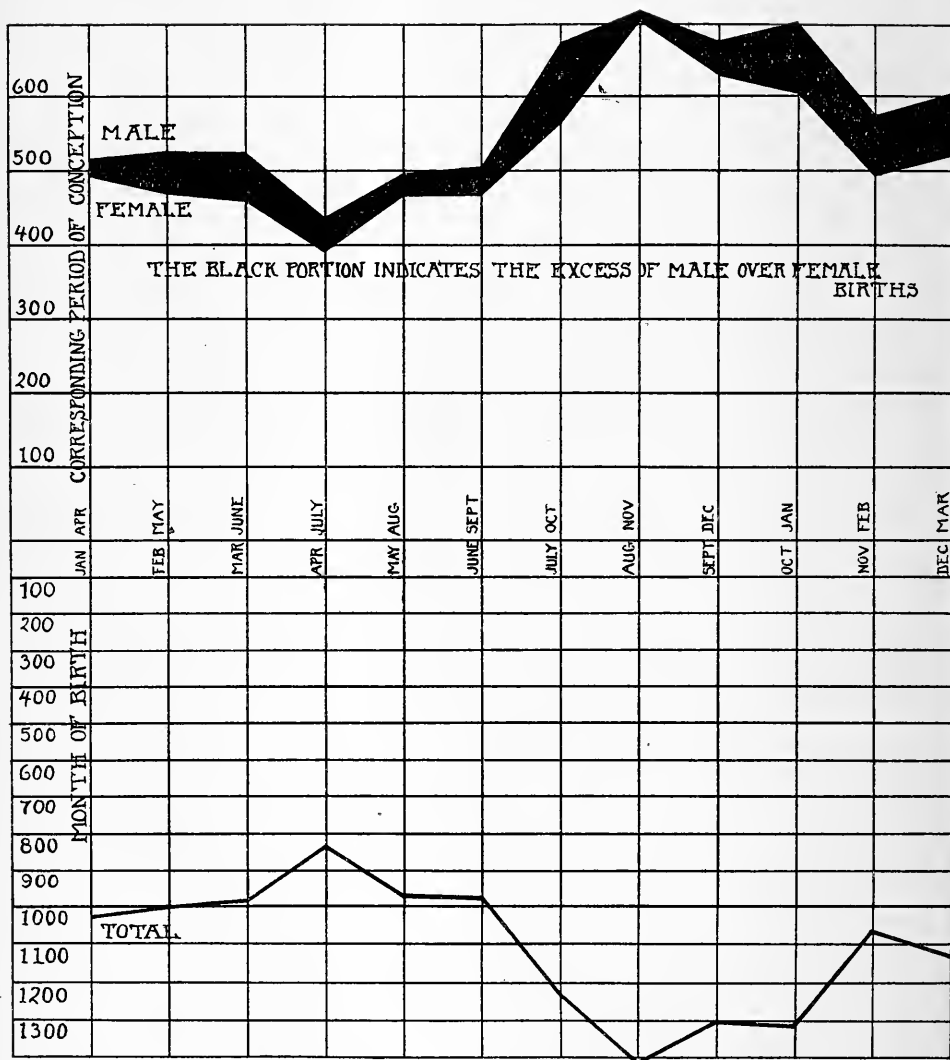


CHART 1—Births by Months, Male, Female and Total.
Rural Maryland, 1912.

TABLE IV.

BIRTHS, MALE AND FEMALE, BY MONTHS—RURAL DISTRICTS, 1912.

<i>Month of Birth.</i>	<i>Corresponding Month of Conception.</i>	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
January.....	April.....	517	496	1,013
February.....	May.....	526	473	999
March.....	June.....	522	460	982
April.....	July.....	487	394	831
May.....	August.....	497	468	965
June.....	September.....	504	471	975
July.....	October.....	673	565	1,238
August.....	November.....	713	702	1,415
September.....	December.....	674	629	1,303
October.....	January.....	702	604	1,306
November.....	February.....	571	495	1,066
December.....	March.....	605	521	1,136
		6,941	6,278	13,229

TABLE V.

STILL BIRTHS—MARYLAND, 1912.

	<i>White.</i>			<i>Colored.</i>			<i>Total White & Colored.</i>
	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>	<i>Male.</i>	<i>Female.</i>	<i>Total</i>	
January.....	30	24	54	22	12	34	88
February.....	18	10	28	16	9	25	53
March.....	31	18	49	19	10	29	78
April.....	13	15	28	14	10	24	52
May.....	25	14	39	11	11	22	61
June.....	20	14	34	11	5	16	50
July.....	30	12	42	18	7	25	67
August.....	26	16	42	18	5	23	65
September....	35	13	48	8	16	24	72
October.....	36	19	55	13	10	23	78
November.....	25	11	36	10	14	24	60
December.....	21	18	39	20	13	33	72
Total.....	310	184	494	180	122	302	796
Baltimore City	238	176	414	151	124	275	689
Total B. City & Counties..	548	360	908	331	246	577	1,485

(12) Sex unknown.

(1) Color unknown.

4 sets twins.

2 sets triplets.

Total births, all classes, 24,627.

Still-births, 1,485.

Percentage of all births—still-births, 6.03%.

The succeeding table (Table VI) gives illegitimate births by counties. These figures include mainly returns of white births, as owing to the peculiar marital relations of the colored race, it is difficult to establish a standard of legitimacy for children born of colored parents. Ecclesiastical marriages, as provided by Maryland statute, are not performed in a large proportion of colored persons who are living as man and wife. The highest proportion of illegitimates, in the counties, according to these figures, was in Talbot county (45.28 per 1,000 of births). The statistics for the illegitimate births will always be defective until we adopt a proper certificate of birth which will necessitate as part of the data thereon the fact whether or not the birth is a legitimate or illegitimate one.

TABLE VI.

ILLEGITIMATE BIRTHS—MARYLAND, 1912.

Counties.	Number.			Total Births.	<i>Illegitimate Births Per 1,000. of Births.</i>
	White.	Colored.	Total.		
Allegany.....	22	3	25	1,449	17.25
Anne Arundel.....	1	10	11	845	13.02
Baltimore.....	8	8	16	1,910	8.38
Calvert.....	3	3	6	267	22.47
Caroline.....	1	1	2	250	8.00
Carroll.....	2	3	5	536	9.33
Cecil.....	5	5	10	347	28.82
Charles.....	1	6	7	422	16.59
Dorchester.....	5	19	24	594	40.40
Frederick.....	6	17	23	879	26.17
Garrett.....	4	0	4	427	9.37
Harford.....	5	0	5	325	15.38
Howard.....	2	5	7	319	2.14
Kent.....	0	5	5	259	19.58
Montgomery.....	1	8	9	516	17.44
Prince George's.....	2	4	6	802	7.48
Queen Anne's.....	1	1	2	292	6.85
Somerset.....	2	4	6	468	12.82
St. Mary's.....	1	2	3	202	14.85
Talbot.....	1	11	12	265	45.28
Washington.....	11	4	15	1,151	13.03
Wicomico.....	3	2	5	341	14.66
Worcester.....	2	7	9	363	24.79
Total.....	89	128	217	13,229	16.40
Baltimore City.....	405	467	872	11,398	76.50
Total Balto. City and Counties.....	494	595	1,089	24,627	44.22

The succeeding table (Table VII) gives figures of maximum fecundity in the rural districts during 1912. The table only gives figures of maximum fecundity, as those of mean fecundity are not available, but it may be of interest to consider the figures of European countries, giving the average number of births to a marriage: Italy, 5.15; England, 4.63; France, 3.42.

In the succeeding table only children in excess of the tenth during 1912 are considered. Of these there were 239 white and 91 colored, a total of 330. The percentage of all births being: White, 1.82%; colored, 0.70%; total, 2.52%.

TABLE VII.

TABLE OF MAXIMUM FECUNDITY—NUMBER OF CHILD IN EXCESS OF TENTH
BORN IN MARYLAND, 1912—RURAL DISTRICTS.

		11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total.	Twins	Triplets
Allegany.....	W	14	5	9	5	2										35	18	1
	C		1		1											2		
Anne Arundel...	W	5	5	2		1										13	4	
	C	1	3	1				1								6	4	
Baltimore	W	15	10	6	3											34	17	
	C	1	1	1	1											4	3	
Calvert	W		2													2	1	
	C	5	1													6		
Caroline	W		2	1												3		
	C	2	1	1			1									5		
Carroll	W	5		2	1											8	3	
	C	1		1												2		
Cecil	W	3	1		1											5	2	
	C			1												1	1	
Charles	W	2	1		1											4		
	C	4	4	2												10	2	
Dorchester	W	3	1	1		1			1							7	5	
	C	5	2													7	2	
Frederick.....	W	12	9	4	2	1										28	5	
	C			1		1										2	2	
Garrett.....	W	7	5	2	1											15	2	
	C		1													1		
Harford	W	3		1		2										6	4	
	C		1	1		1										3		
Howard	W	3	1	2	1	1		1								9	3	
	C				1	1					1			1		3	1	
Kent.....	W	1		1												2	1	
	C	2									1					3		
Montgomery....	W	1	1	1												3	6	
	C		1	2	1											4	2	
Prince George's..	W	7	1	1			3	1								13	12	
	C	6	4		1										1	12	2	
Queen Anne's...	W	4	4	1												9	1	
	C	3			2											5	2	
Somerset	W	1	1	1												3	5	
	C	2	1	1												4	2	
St. Mary's.....	W	3	2	1	1											7		
	C	1	1	3												5		
Talbot.....	W	1														1	1	
	C	1	1	1												3		
Washington.....	W	12	8	5	1											26	12	1
	C																1	
Wicomico.....	W	1		2			1									4	5	
	C	1	1													2	2	
Worcester.....	W	3	1													4	2	
	C	1	1	1												3	1	
White		106	60	43	17	8	4	2	1							241	109	2
Colored		36	25	17	7	2	1	1			2				1 1	93	27	
Total.....		142	85	60	24	10	5	3	1		2				1 1	334	136	2

A seventeenth child of colored parents was born in Anne Arundel county; a sixteenth of colored parents in Caroline county and an eighteenth child to white parents in Charles county. An eighteenth child of white parents was born in Dorchester county; a twentieth and a twenty-third to colored parents in Howard county and a twenty-fourth child of colored parents was born in Prince George's county.

In Table VIII the maximum age of fathers and mothers of children born in Maryland during 1912 and discrepancies in ages of parents are shown for the white and colored races by counties. This table considers: A, maximum age of father; B, maximum age of mother; C, minimum age of father; D, minimum age of mother; E, greatest difference in ages (father older); F, greatest difference in ages (mother older).

TABLE VIII.

TABLE SHOWING THE MAXIMUM AND MINIMUM AGES OF FATHERS AND MOTHERS OF CHILDREN BORN IN MARYLAND DURING 1912. ALSO DISCREPANCIES IN THE AGES OF PARENTS, WHITE AND COLORED, RURAL DISTRICTS.

ALLEGANY COUNTY.						
	W.	W.	C.	W.	W.	W.
Age of Father.....	71	51	17	21	16	30
Age of Mother.....	30	48	15	15	19	41
E. 41 years.....	A	B	D	D	C	F
F. 11 years.....	E					

ANNE ARUNDEL COUNTY.						
	C.	C.	C.	C.	C.	W.
Age of Father.....	70	50	17	19	60	27
Age of Mother.....	40	48	15	14	25	37
E. 35 years.....	A	B	C	D	E	F
F. 10 years.....						

BALTIMORE COUNTY.						
	W.	W.	W.	W.	C.	
Age of Father.....	65	42	18	19	15	
Age of Mother.....	33	48	14	36	15	
E. 32 years.....	A	B	D	F	C	
F. 14 years.....	E					

CALVERT COUNTY.						
	W.	C.	C.	C.		
Age of Father.....	64	58	17	32		
Age of Mother.....	34	47	15	37		
E. 30 years.....	A	B	C	F		
F. 5 years.....	E		D			

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CAROLINE COUNTY.

	W.	W.	W.	W.	W.
Age of Father.....	54	50	15	18	27
Age of Mother.....	25	45	18	15	37
E. 29 years.....	A	B	C	D	F
F. 10 years.....	E				

CARROLL COUNTY.

	W.	W.	W.	C.	W.	W.
Age of Father.....	74	50	18	20	36	32
Age of Mother.....	24	45	24	16	43	39
E. 50 years.....	A	B	C	D	F	F
F. 7 years.....	E					

CECIL COUNTY.

	W.	C.	C.	W.	W.	W.
Age of Father.....	60	49	17	42	52	28
Age of Mother.....	40	46	17	16	18	33
E. 34 years.....	A	B	C	D	E	F
F. 5 years.....						

CHARLES COUNTY.

	C.	W.	C.	C.	C.	W.
Age of Father.....	74	43	19	50	60	23
Age of Mother.....	38	42	16	15	16	33
E. 44 years.....	A	B	C	D	E	F
F. 10 years.....						

DORCHESTER COUNTY.

	C.	W.	C.	W.	C.
Age of Father.....	70	53	17	62	28
Age of Mother.....	39	47	14	27	39
E. 35 years.....	A	B	C	E	F
F. 11 years.....			D		

FREDERICK COUNTY.

	W.	C.	W.	W.	W.	W.
Age of Father.....	74	50	15	15	26	25
Age of Mother.....	35	45	24	15	15	36
E. 39 years.....	A	B	C	D	D	F
F. 11 years.....	E					

GARRETT COUNTY.

	W.	W.	W.	W.	W.
Age of Father.....	58	50	18	18	24
Age of Mother.....	24	44	18	18	14
E. 34 years.....	A	B	C	C	D
	E				

HARFORD COUNTY.

	W.	W.	W.	W.	W.	W.
Age of Father.....	61	35	18	27	59	24
Age of Mother.....	69	45	19	15	29	34
E. 30 years.....	A	B	C	D	E	F
F. 10 years.....		F				

HOWARD COUNTY.

	W.	C.	C.	W.
Age of Father.....	58	19	22	56
Age of Mother.....	43	25	14	26
E. 30 years.....	A	C	D	E
F. 6 years.....	B	F		

KENT COUNTY.

	W.	C.	C.	W.
Age of Father.....	57	17	50	25
Age of Mother.....	40	14	17	34
E. 33 years.....	A	C	E	F
F. 9 years.....	B	D		

MONTGOMERY COUNTY.

	W.	W.	C.	C.	C.	C.
Age of Father.....	63	50	18	unk.	61	25
Age of Mother.....	38	55	18	13	26	40
E. 35 years.....	A	B	C	D	E	F
F. 15 years.....						

PRINCE GEORGE'S COUNTY.

	C.	W.	C.	W.	W.	W.
Age of Father.....	69	52	18	24	65	22
Age of Mother.....	43	51	17	15	27	37
E. 38 years.....	A	B	C	D	E	F
F. 15 years.....						

QUEEN ANNE'S COUNTY.

	C.	C.	C.	W.
Age of Father.....	55	19	49	24
Age of Mother.....	45	17	17	36
E. 32 years.....	A	C	D	F
F. 12 years.....	B		E	

SOMERSET COUNTY.

	C.	W.	C.	C.	W.	C.
Age of Father.....	58	42	17	unk.	50	23
Age of Mother.....	44	46	15	14	20	32
E. 30 years.....	A	B	C	D	E	F
F. 9 years.....						

ST. MARY'S COUNTY.

	C.	W.	W.	W.	C.
Age of Father.....	60	52	21	24	54
Age of Mother.....	40	47	17	16	28
E. 26 years.....	A	B	C	D	E

TALBOT COUNTY.

	C.	C.	W.	C.
Age of Father.....	59	28	19	unk.
Age of Mother.....	25	55	16	16
E. 34 years.....	A	B	C	D
F. 27 years.....	E	F	D	

WASHINGTON COUNTY.

	W.	W.	C.	W.	W.
Age of Father.....	65	55	13	58	25
Age of Mother.....	34	48	13	21	38
E. 39 years.....	A	B	C	E	F
F. 13 years.....			D		

WICOMICO COUNTY.

	W.	W.	C.	C.	W.	W.
Age of Father.....	60	52	18	20	55	24
Age of Mother.....	42	43	16	15	25	33
E. 30 years.....	A	B	C	D	E	F
F. 9 years.....						

	WORCESTER COUNTY.					
	W.	W.	C.	C.	C.	C.
Age of Father.....	61	54	17	42	60	24
Age of Mother.....	43	44	15	14	30	35
E. 30 years.....	A	B	C	D	E	F
F. 11 years.....						

SUMMARY.

AVERAGE AGES OF PARENTS.

To determine the average age of parents, the number of parents of each sex having reached a given quinquennial period (15-20, 20-25, etc.), at the time of the birth of the child, is multiplied by the median age (17.5, 22.5, etc.).

For mothers of 45 years or over, 50 is the factor employed. For fathers of 50 years or over, the factor 55 is used.

Since the number of mothers reaching the age of 50 is small, while the number of fathers reaching an age in excess of 55 is large, the average age of the mother, as it appears in this table, will be somewhat too high. It will be noticed on reference to the preceding table that the maximum age of any mother was 55 years, and one other mother in the series reached the age of 51 years.

The result of the analysis of these figures appears below:

Average age of father.....	32.78
Average age of mother.....	27.76

According to the figures the father is 5.02 years older than the mother.

Maxima, minima and difference of parents' ages:

Maximum age of father, 74 years (mother 24, white).

Maximum age of mother, 55 years (father 50, white; father 28, colored).

Minimum age of father, 13 years (mother 13, colored).

Minimum age of mother, 13 years (father 13, colored).

Greatest differences in ages, 50 years (mother 24, father 74, white; father older).

Greatest difference in ages, 27 years (mother 55, father 28, colored; mother older).

The succeeding table (Table IX.) gives the ages of fathers and mothers of children born in the rural districts of Maryland during 1912 without distinction of color.

TABLE IX.

AGE OF PARENTS OF CHILDREN BORN IN RURAL MARYLAND DURING 1912.

Age.	Number of Fathers.	Per Cent.	Number of Mothers.	Per Cent.
10 to 15.....	1	.008	15	0.11
15 to 20.....	149	1.13	1,359	10.27
20 to 25.....	2,263	17.11	3,623	27.39
25 to 30.....	3,170	23.96	3,170	23.96
30 to 35.....	2,663	20.13	2,407	18.19
35 to 40.....	2,324	17.57	1,778	13.44
40 to 45.....	1,386	10.48	639	4.83
45 to 50.....	666	5.03	....	....
50 and over.....	387	2.92	....	....
45 and over.....	....	....	90	.68
Unknown.....	220	1.66	148	1.12
Total.....	13,229		13,229	

One father at the age of 13; three mothers at the age of 13; twelve mothers at the age of 14.

The above table may be used for comparative purposes in determining the age most favorable to fecundity in the male and female sexes, though it must be understood that such a table is only approximate even for comparative purposes, unless the figures for the age of married persons of both sexes are available. From this table it appears that the greatest number of fathers was at the age of 25 to 30 years (23.96%), and the greatest number of mothers at the age of 20 to 25 years (27.39%). The table illustrates, however, very plainly the superior fecundity of the female sex in early life, and the persistence of fecundity in the male in advanced life. Thus only 1.138% of the fathers were under the age of 20, against 10.38% of the mothers, or a proportion of about 1 to 10, and of the mothers included in the percentage there were 12 at the age of 14 and 3 at 13 years of age. At the other extreme, however, we find 7.95% of the fathers above the age of 45, and only 0.68% of the mothers, a proportion of about 1 to 12, and among this group there were three fathers of 74, 1 of 71, while the maximum age of the mothers was 55 years.

A brief reference may be made to the "*tables of nativity*" of Korosi, of Buda-Pesth. Stated *mono-sexually*, the maximum fecundity of the female in Buda-Besth is reached between the 18th and 19th year. In the male the maximum fecundity is reached between the 25th and 26th year. In the following table

the mean age of fathers and mothers of children born in Maryland during 1912 is stated (Table X.).

TABLE X.

MEAN AGES OF PARENTS OF CHILDREN BORN IN RURAL MARYLAND
DURING 1912.

Mean age of fathers.....	32.78
Mean age of mothers.....	27.76
Mean excess of father's age.....	5.02

TABLE XI.

PERCENTAGE OF NATIVE AND FOREIGN BORN PARENTS OF CHILDREN BORN
IN THE COUNTIES OF MARYLAND DURING 1912.

<i>Counties.</i>	<i>Parent Nativity.</i>							
	<i>Native.</i>				<i>Foreign.</i>			
	<i>Both Maryland.</i>	<i>One Maryland.</i>	<i>Neither Maryland.</i>	<i>Total Natives.</i>	<i>Both Foreign.</i>	<i>Father Foreign.</i>	<i>Mother Foreign.</i>	<i>Total Foreign.</i>
Allegany	42.79	27.67	18.76	89.22	5.31	3.31	2.14	10.76
Anne Arundel...	63.91	10.18	4.61	78.70	15.03	5.21	1.07	21.31
Baltimore	64.40	12.83	7.53	84.76	7.12	5.18	2.93	15.23
Calvert	93.63	4.49	1.87	99.99	0.00	0.00	0.00	0.00
Caroline	67.20	21.20	6.40	94.80	2.40	2.00	0.80	5.20
Carroll	82.46	14.18	1.49	98.13	0.93	0.56	0.37	1.86
Cecil	67.15	23.05	5.18	95.38	2.31	1.73	0.57	4.61
Charles	87.44	8.29	3.08	98.81	0.47	0.24	0.47	1.18
Dorchester	90.91	7.41	1.01	99.33	0.00	0.67	0.00	0.67
Frederick	74.86	15.59	7.96	98.41	1.91	0.34	0.34	1.59
Garrett	58.08	26.70	12.17	96.95	1.41	0.47	1.17	3.05
Harford	74.15	17.54	4.62	96.31	1.54	1.23	0.92	3.69
Howard	79.94	12.23	3.13	95.30	2.19	1.25	1.25	4.69
Kent	84.56	10.81	1.54	96.91	1.93	0.77	0.39	3.09
Montgomery	68.22	17.82	12.02	98.06	1.16	0.57	0.19	1.92
Prince George's..	61.22	15.96	16.71	93.89	4.36	1.24	0.49	6.09
Queen Anne's ..	87.33	10.27	2.05	99.65	0.00	0.34	0.00	0.34
Somerset	83.55	12.61	2.77	98.93	0.21	0.64	0.21	1.06
St. Mary's	89.11	7.43	1.48	98.02	1.98	0.00	0.00	1.98
Talbot	83.77	8.68	4.91	97.36	1.13	1.13	0.37	2.63
Washington	60.03	24.76	12.68	97.47	1.56	0.78	0.17	2.51
Wicomico	74.19	17.01	7.33	98.53	0.59	0.59	0.29	1.47
Worcester	74.66	19.56	3.86	98.08	1.10	0.55	0.28	1.93
Total.....	68.93	16.39	8.23	93.55	3.52	1.95	0.99	6.46

In the preceding table, number XI, the nationality of parents of children born in Maryland during 1912 is returned in six columns. In the sub-columns the native and foreign born parents are considered separately. In the column headed "Neither Maryland", the native parents are included, both of whom were born in the United States, but neither a native of Maryland. The foreign column is in three sub-divisions, in the first of which are included parents, both of whom are of foreign birth; and, second, father foreign; and third, mother foreign. By reference to this column, it will be seen that the largest proportion of native parents occurred in Calvert county, 99.99%. The greatest proportion of foreign parents was in Anne Arundel county, 21.31%. Baltimore being next in order, with 15.23%. In three counties the proportion of native born parents exceeded 99%, Calvert, Dorchester and Queen Anne's. In Calvert county, 93.63% and in Dorchester county, 90.91% of the parents of children born in 1912 were both natives of Maryland. In the rural districts at large there were 93.55% of the parents natives of the United States, and 6.46% foreign born. In Allegany county a large proportion of the percentage returned in total foreign were Anglo-Saxon, being natives of Wales, England and Scotland. The highest percentage of both parents foreign was in Anne Arundel county, 15.03%, and the highest percentage of mothers foreign was in Baltimore county, 2.93%. In Baltimore county 5.18% of the fathers were foreign born.

DEATHS IN MARYLAND.

The total number of deaths recorded in Maryland during 1912 was 20,597; of these, 10,156 occurred in the rural districts and 10,441 in Baltimore City.

The total number of white deaths was 9,944; of colored deaths, 10,653.

The total number of male deaths was 10,980; of female deaths, 9,617.

Table II gives the births, deaths and increase, and the birth rates, death rates and rate of increase (per 1,000) for the white and colored population of Maryland.

Table III gives the births, birth rates, deaths, death rates and excess of births over deaths per 1,000 of population for the male, female, white and colored, and total population of the rural districts, Baltimore City and the State of Maryland.

It would probably be advantageous to state the male and female death rates separately for the white and colored races, but the conditions shown in these figures would not be materially changed, viz., the superior vitality and longevity of the females of both races.

This table shows, in common with other tables giving death rates for the urban and rural districts, the adverse influence of city life.

Table III indicates another point in connection with city life, viz: that urban conditions fall with especial severity on the colored race.

TABLE XII.

DEATHS FOR THE YEAR 1912 BY AGES, SHOWING PERCENTAGES OF TOTAL MORTALITY IN THE SEVERAL AGE PERIODS OF LIFE IN THE RURAL DISTRICTS, BALTIMORE CITY AND IN THE STATE OF MARYLAND.

	<i>Rural Districts.</i>		<i>Baltimore City</i>		<i>Maryland.</i>	
	<i>Deaths.</i>	<i>Per Ct.</i>	<i>Deaths.</i>	<i>Per Ct.</i>	<i>Deaths.</i>	<i>Per Ct.</i>
0 to 1 year.....	1983	19.53	2026	19.40	4009	19.46
1 to 5 years.....	709	6.98	697	6.68	1406	6.83
5 to 10 years.....	202	1.99	171	1.64	373	1.81
10 to 15 years.....	169	1.66	103	0.99	272	1.32
15 to 20 years.....	305	3.00	251	2.40	556	2.70
20 to 25 years.....	356	3.51	386	3.70	742	3.60
25 to 30 years.....	352	3.47	491	4.70	843	4.09
30 to 35 years.....	352	3.47	474	4.54	826	4.01
35 to 40 years.....	367	3.61	518	4.96	885	4.30
40 to 45 years.....	357	3.52	547	5.24	904	4.39
45 to 50 years.....	381	3.75	559	5.35	940	4.56
50 to 55 years.....	470	4.63	657	6.29	1127	5.47
55 to 60 years.....	499	4.91	557	5.33	1056	5.13
60 to 65 years.....	594	5.85	682	6.53	1276	6.19
65 to 70 years.....	708	6.97	669	6.41	1377	6.69
70 to 75 years.....	777	7.65	593	5.68	1370	6.65
75 to 80 years.....	626	6.16	480	4.60	1106	5.37
80 years and over....	879	8.65	579	5.55	1458	7.08
Unknown	70	0.69	1	.0096	71	0.34
Total.....	10156	....	10441	....	20597	....

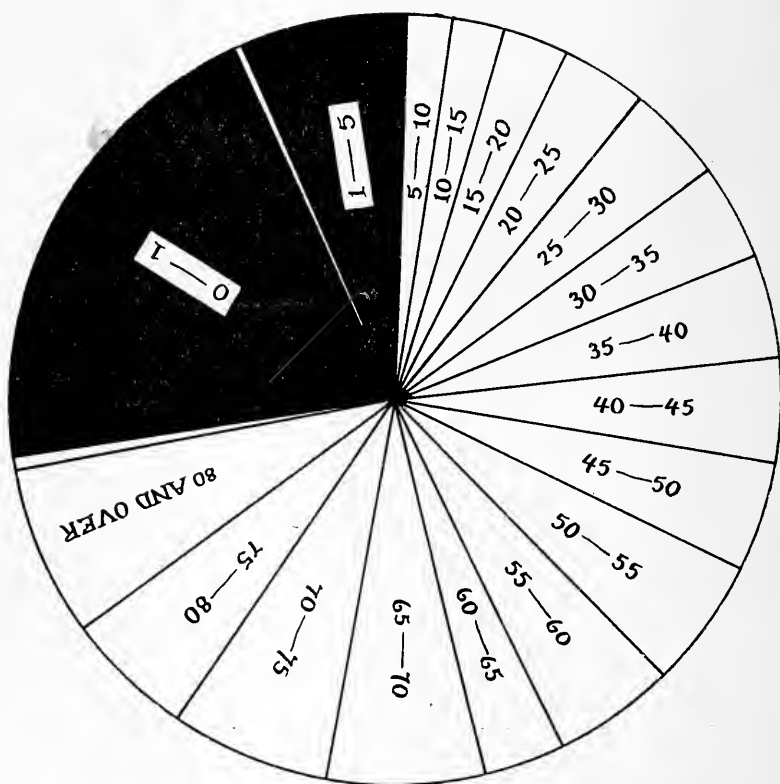
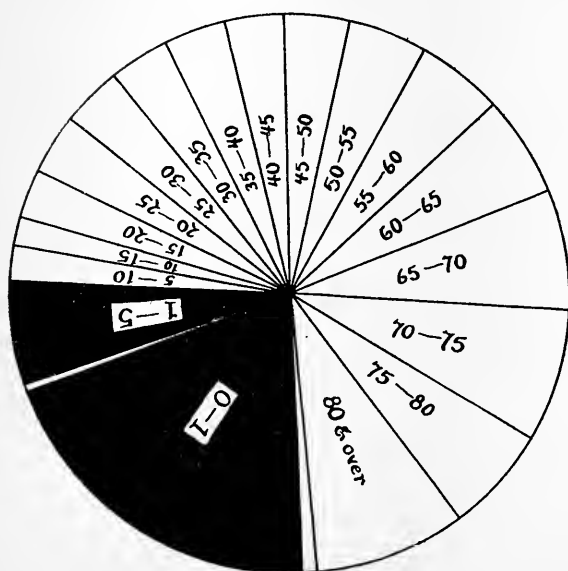
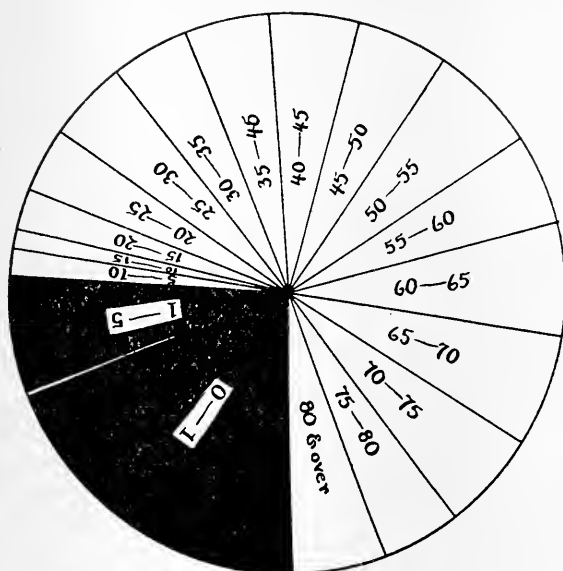


CHART 2—*State of Maryland. Deaths by Ages, 1912.*



BALTIMORE

1912

RURAL DISTRICTS

CHART 3—Deaths by Ages.

The preceding table (Table No. XII) gives the distribution of the deaths in the rural districts, Baltimore City and Maryland, according to age, giving the number of deaths at each age period and the percentages of total mortality. Chart No. 2 and Chart No. 3 show graphically the percentage of deaths at the several age periods; the charts indicate the excessive percentage of deaths in infancy (under 2 and under 5 years), and a large number of adult deaths at about the age of 70. The observation of the Psalmist in fixing the span of human life at three-score and ten years is, in a sense, correct at the present day, inasmuch as a larger number of adults die at this age than at any other age period.

The table shows that the infantile mortality is slightly higher in rural districts than in Baltimore City, as 19.53% of the deaths in the rural districts occurred under the age of 1 year and 19.40% in Baltimore City. The figures under the age of 5 for Baltimore City are 26.08%, and the rural districts, 26.51%. This difference is also to be noted in the accompanying charts. The number of deaths over the age of 80 years is considerably higher in the rural districts (8.65%) than in Baltimore City (5.55%). About three-quarters of the infantile mortality occurs in the first 2 years of life. This table does not show the actual mortality at the various age periods, as to determine this, the mortality of persons living at each age period must be given.

Table XIII gives the estimated population and percentage living at each age period and the deaths and mortality for each age period.

The infant death rate shown in this table for the State of Maryland is 38.69 per 1,000. After 5 years of age the mortality falls to 2.74 per 1,000 and at the age period from 10-15 to 2.06 per 1,000. The mortality rises slowly thereafter until it rises above the infant mortality after the age of 65 years. The mortality after the age of 80 is 209.00 per 1,000.

The lowest death rate is in the period between 10 and 15 years, 2.06 per 1,000.

TABLE XIII.

POPULATION AND DEATHS PER THOUSAND AT THE SEVERAL AGE PERIODS—
MARYLAND, 1912.

<i>Ages.</i>	<i>Per Cent.</i>	<i>Estimated Population.</i>	<i>Deaths.</i>	<i>Mortality Per 1,000 of Those Living at the Age</i>
Under 5 years.....	10.63	139,976	5,415	38.69
5 to 10 years.....	10.32	135,894	373	2.74
10 to 15 years.....	10.01	131,812	272	2.06
15 to 20 years.....	9.88	130,100	556	4.27
20 to 25 years.....	9.51	125,228	742	5.93
25 to 30 years.....	8.49	111,797	843	7.54
30 to 35 years.....	7.39	97,312	826	8.49
35 to 40 years.....	7.11	93,625	885	9.45
40 to 45 years.....	6.06	79,798	904	11.33
45 to 50 years.....	5.23	68,869	940	13.65
50 to 55 years.....	4.55	59,915	1,127	18.81
55 to 60 years.....	3.32	43,718	1,056	24.15
60 to 65 years.....	2.69	35,422	1,276	36.02
65 to 70 years.....	2.05	26,995	1,377	51.01
70 to 75 years.....	1.36	17,909	1,370	76.50
75 to 80 years.....	0.76	10,008	1,106	110.51
80 to 85 years...	0.53	6,976	1,458	209.00
85 to 90 years...				
90 to 95 years...				
95 to 100 years..				
100 years and over				
Unknown	0.11	1,448	71	49.03

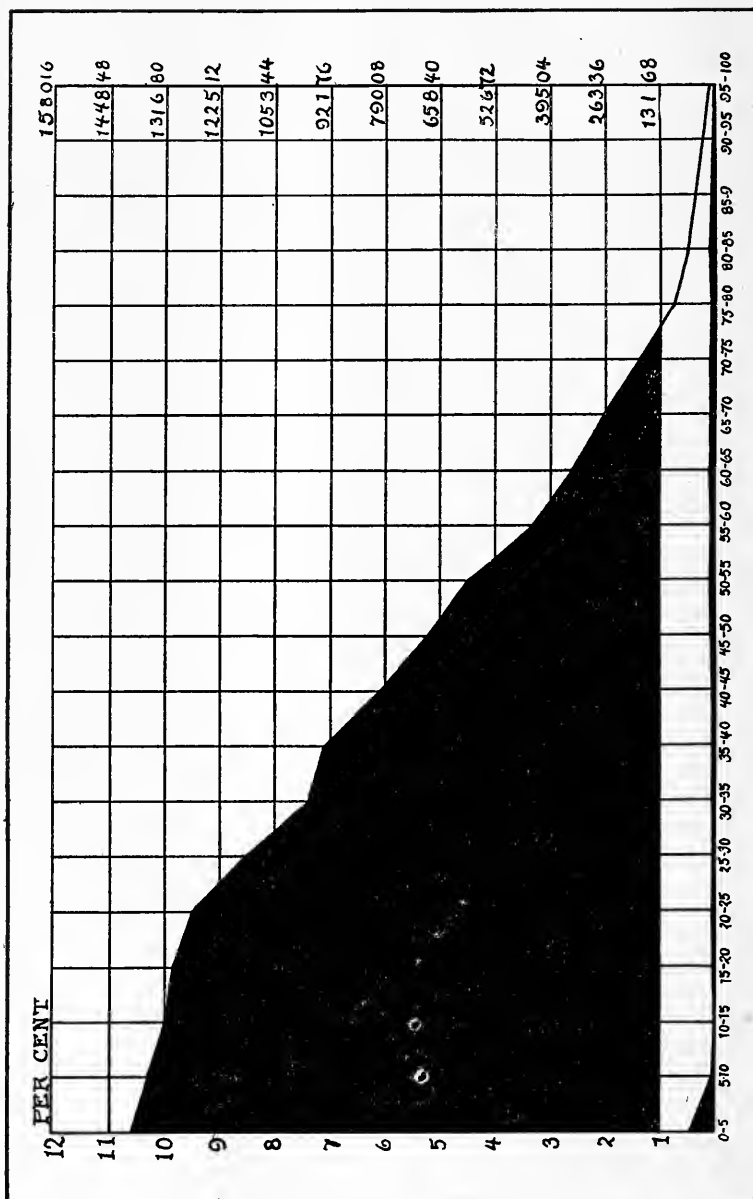


CHART 4—*Distribution of the Population and Deaths by Ages, Maryland 1912.*

The figures of this table are graphically shown in Chart 4. The profile of the black area, including the portion below, indicates the population; the number of deaths is shown in the black area described below. The population and deaths are shown for quinquennial periods up to the twentieth year; the deaths are shown thereafter in decennial periods.

It will be noted that after the twentieth year the absolute number of deaths remains somewhat the same, but the classes of the population from which they are drawn become progressively smaller, hence the mortality in the several age periods becomes progressively greater, increasing in a high geometric ratio in the later period of life.

The diseases producing the general mortality analyzed in the preceding tables are shown in Tables A and B, at the end of the report, and in the special tables of this section.

It is evident from the sanitary point of view that important differences exist in the nature of these diseases in their relations to the public health, both as regards their infectiousness and the possibility of their prevention; accordingly, the diseases have been classified in the table from a strictly sanitary standpoint.

The following main divisions have been recognized—constitutional diseases, congenital diseases and malformations, poisonings and intoxications, malignant neoplasms, degenerations, pregnancy and violence; other obscure and inaccurately classified affections not properly falling in one of the previous classes.

The most important of these classes is that including parasitic diseases, which are mostly communicable, and are to a large extent within the power of sanitary control. All diseases of parasitic origin may be assumed to be communicable to a certain degree, although important differences exist as to the amount and extent of their contagiousness. Accordingly, these diseases are considered in three classes: (a) Infectious and contagious diseases; (b) communicable diseases; (c) other infections of parasitic origin.

The diseases classified under each heading are shown in Table XIV. Parasitic diseases form a class largely under the control of sanitary authorities. Poisonings and intoxications are to some extent controlled by law. Constitutional dyscrasias are not, as a rule, subject to administrative control, while congenital diseases and malformations are wholly beyond administrative influence. Deaths from violence are also usually outside the control of sanitary authorities. The diseases classified under degenerations and malignant neoplasms form a class of maladies which are imperfectly understood, and are accord-

ingly not capable of control by our present methods. The comparative importance of these classes as causes of death is graphically shown in Chart 5.

TABLE XIV.

A CLASSIFICATION OF CAUSES OF DEATH, WITH THE NUMBER OCCURRING AND THEIR RATIOS TO THE MORTALITY (MARYLAND, 1912).

<i>Diseases.</i>	<i>Balto. City.</i>	<i>Rural Districts.</i>	<i>Total.</i>	<i>P. C. of Total Mort.</i>
PARASITIC DISEASES.				
(Infectious and Contagious Diseases).				
Typhoid fever, scarlatina, whooping cough, diphtheria, influenza, smallpox, measles, glanders, anthrax, actinomycosis.....	361	568	929	4.85
(*Communicable Diseases).				
Malaria, dysentery, tuberculosis, syphilis, tetanus, pneumonia, gonorrhœa, rabies, erysipelas..	2,181	1,643	3,824	19.97
(†Other Infections).				
Septicæmia, pyemia, rheumatism (febril), meningitis, bronchitis, broncho-pneumonia, gastrointestinal inflammations (summer diarrhœa of infants), cholera nostras, tonsillitis, pharyngitis, cholecystitis (and other inflammations of the liver and gall bladder), pericarditis, cystitis, peritonitis, acute nephritis, gangrene, abscess, furuncle, pleurisy, appendicitis, laryngitis, metritis, endometritis, endocarditis (acute), salpingitis, pellagra.....	1,828	1,748	3,576	18.67
Total Parasitic Diseases.....	4,370	3,959	8,329	43.49
CONSTITUTIONAL DYSCRASIAS.				
Diabetes, exophthalmic goitre, gout, anæmia, chlorosis, leukemia, Addison's disease.....	156	121	277	1.45
CONGENITAL DISEASES AND MALFORMATIONS.				
Morbus ceruleus, icterus neonatorum, marasmus, sclerema.....	779	653	1,432	7.48
POISONINGS AND INTOXICATIONS.				
Alcoholism, saturnism and occupational intoxications, scorbutus.....	51	53	104	0.54
MALIGNANT NEOPLASMS.				
Epithelioma, carcinoma, sarcoma.....	545	478	1,023	5.34

*All communicable diseases have been assumed to be due to a living organism, and included in this list, whether the specific cause has been discovered or not.

†The distinction between these three classes is one of kind, rather than degree, as all parasitic diseases may at some time be communicable.

TABLE XIV.—*Continued.*

<i>Diseases.</i>	<i>Bulto. City.</i>	<i>Rural Dist.</i>	<i>Total</i>	<i>Per Cent.</i>
‡DEGENERATIONS.				
Cerebral congestion and hemorrhage, paralysis (without specified cause), meningo-encephalitis, cerebral softening(?), epilepsy, organic diseases of the heart, angina pectoris, arteriosclerosis, aneurism (and allied arterial degenerations), asthma (in all forms), Bright's disease, senile debility and dementia, locomotor ataxia, myelitis, insanity.....	3,024	3,170	6,194	32.34
PREGNANCY.				
Puerperal hemorrhage, puerperal septicemia- puerperal albuminuria and convulsions, pleg- masia alba dolens.....	105	106	211	1.10
VIOLENCE.				
Suicide, homicide, murder, dueling, accidental violence, poisoning, gas inhalation, drowning, strangulation and legal execution, death by insulation, lightning, freezing, burns and scalds.....	490	622	1,112	5.80
INACCURATELY CLASSIFIED.				
Encephalitis, hemorrhage, benign tumors, pul- monary congestion and apoplexy, and organ- ic diseases of unspecified nature.....	140	328	468	2.44
Total.....	9,660	9,490	19,150	

*All communicable diseases have been assumed to be due to a living organism, and included in this list whether the specific cause has been discovered or not.

†The distinction between these three classes is one of kind, rather than degree as all parasitic diseases may at some time be communicable.

‡Includes mainly the disorders dependent on advanced years and prolonged strain.

Principal Causes of Death.

The principal causes of death are separately considered, as together they cause about seventy-five per cent. of the total mortality, and they are, in the main, preventable diseases.

In Table XV the twenty principal causes of death are tabulated, the table giving the number of deaths, the percentage of the total deaths and the mortality per 10,000.

There has been a marked decrease in the deaths from pulmonary and laryngeal tuberculosis. The total number of deaths from this cause in 1910 was 2,315, in 1911 the total number of deaths was 2,223, and in 1912 was 2,178. The per cent. of total mortality has dropped from 11.27 in 1910, to 10.57 in 1912. On the other hand, deaths from certain non-infectious diseases, as organic heart disease and chronic Bright's disease have increased. Deaths from diarrhoea and enteritis under two years have dropped from 6.11% to 5.37%. Attention is here called to the large number of deaths from accidental violence. This cause of death in the State of Maryland has had a steady rise for the last few years until it occupies the ninth place in the twenty causes of death. In 1910 there were reported 425 deaths from this cause, in 1911 there were reported 612 deaths, and in 1912 there were reported 819 deaths. There is a definite decrease in the deaths from typhoid fever. Acute nephritis has again dropped from this list. This cause of death seems to come in the twenty principal causes appearing every two or three years. Deaths from whooping cough and influenza show a perceptible decrease when compared with the preceding year. The steady rise of affections of the arteries as a cause of death needs special mention. A few years ago the cause had never entered the list, but has, in the last five years, steadily increased until now it occupies the 14th place in the principal causes of death, a greater number of deaths being due to this cause than to gastric diseases, influenza, meningitis, whooping cough or infantile convulsions.

TABLE XV.

TWENTY PRINCIPAL CAUSES OF DEATH IN MARYLAND, 1912.

	<i>Deaths.</i>	<i>Per Cent. of Total Mortality.</i>	<i>Mortality Per 10,000.</i>
Tuberculosis, Pulmonary and Laryngeal.....	2,178	10.57	16.54
Organic Heart Disease.....	1,749	8.49	13.28
Chronic Bright's Disease.....	1,686	8.19	12.80
Congenital Debility.....	1,274	6.19	9.67
Diarrhœa and Enteritis (under 2 years).....	1,107	5.37	8.41
Malignant Neoplasms.....	1,023	4.97	7.77
Pneumonia Lobar.....	982	4.77	7.46
Cerebral Congestion and Hemorrhage.....	964	4.68	7.32
Accidental Violence.....	819	3.98	6.22
Broncho-Pneumonia	817	3.97	6.20
Senile Debility.....	616	2.99	4.68
Paralysis.....	382	1.86	2.90
Typhoid Fever.....	364	1.77	2.76
Affections of the Arteries.....	361	1.75	2.74
Gastric Diseases.....	251	1.22	1.91
Diarrhœa and Enteritis (over 2 years).....	221	1.07	1.68
Meningitis.....	211	1.02	1.60
Influenza.....	162	0.79	1.23
Convulsions (infantile).....	152	0.74	1.15
Whooping Cough.....	137	0.66	1.04

	SCURVY	
	MEASLES	
	INFLUENZA	
	PHARYNGITIS	
	DIARRHOEA & ENTERITIS (OVER 2 YRS.)	
	GASTRIC DISEASES	
	AFFECTIONS OF THE ARTERIES	
	TYPHOID FEVER	10 PER CENT
	PARALYSIS	
	SENILE DEBILITY	
	BRONCHO PNEUMONIA	
	ACCIDENTAL VIOLENCE	20 PER CENT
	CEREBRAL CONGESTION & HEMORRHAGE	
	PNEUMONIA LOBAR	30 PER CENT
	MALIGNANT NEOPLASMS	
	DIARRHOEA & ENTERITIS (UNDER 2 YRS.)	40 PER CENT
	CONGENITAL DEBILITY	
		50 PER CENT
	CHRONIC BRIGHT'S DISEASE	
	ORGANIC HEART DISEASE	60 PER CENT
	TUBERCULOSIS	70 PER CENT
	PULMONARY & LARYNGEAL	
		80 PER CENT
		90 PER CENT
		100 PER CENT

TWENTY PRINCIPAL CAUSES OF DEATH 1912.

CHART 6.

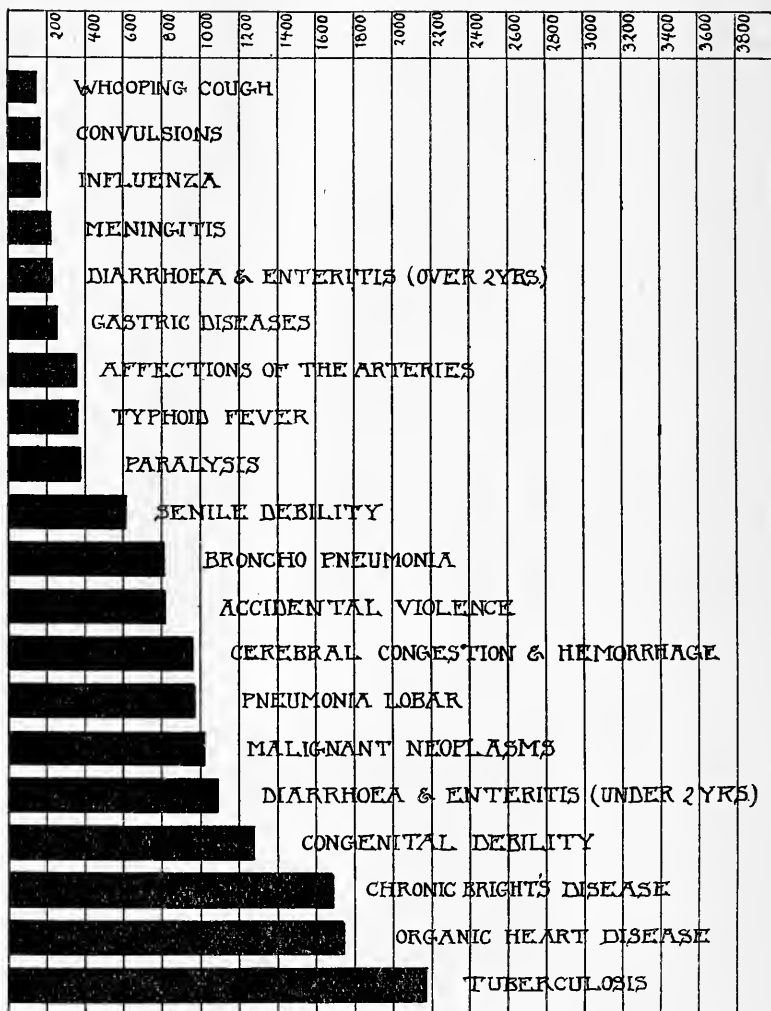


CHART 7—Twenty Principal Causes of Death, 1912.

For the purpose of making a special study of tuberculosis, Table XVI is inserted, which gives the deaths from tuberculosis by age periods, percentage of deaths in age periods, and percentage per 10,000 of the population living at the various age periods, white and colored. A much higher death rate from tuberculosis in the colored race per 10,000 of the living population is noticed throughout. The excess of deaths among the colored population is extremely disproportionate up to the 60th year. On account of the number of deaths occurring from tuberculosis at early age periods, we have always been inclined to feel that tuberculosis is a disease of early adult life. This table demonstrates that, while the number of deaths from tuberculosis are higher in early and middle life, this is due to the large proportion of the population living at this time. When we take a closer survey of the matter, we find that the number of deaths per 10,000 at given age periods remains fairly constant after the 20th year in the white race. In the colored race the figures are higher in the first five years of life, and take a decided rise again after the 15th year, tuberculosis appearing at a much earlier age in the colored race than in the white. While there are some fluctuations in the percentage of deaths per 10,000 of the population of the colored race living at the various age periods, it remains higher nearest the 75th year. This is graphically demonstrated in Chart 8. Chart 9 demonstrates the percentage of deaths from tuberculosis at various age periods, white and colored. This chart shows that although tuberculosis claims its pro rata of deaths throughout the life of the residents of this State, it supersedes all causes of death as a factor in the age periods, from 20 to 40 in the white population, and from 15 to 40 in the colored population. Chart 10 and Table XVI-A demonstrate the number of deaths per 10,000, white and colored, in the various counties. Carroll county shows the smallest number of deaths per 10,000, white and colored; Baltimore and Calvert counties, the greatest number of deaths per 10,000 for the white population; while Kent, Dorchester and Queen Anne's give the greatest number of deaths per 10,000 for the colored population. The deaths per 10,000 in Garrett county are illusively favorable owing to defective returns.

TABLE XVI.

TUBERCULOSIS, 1912—GIVING DEATHS BY AGES—DEATHS PER 10,000 OF POPULATION AT AGE PERIODS—PER CENT. OF DEATHS IN EACH AGE PERIOD OF TOTAL DEATHS—WHITE AND COLORED—MARYLAND.

Ages.	White.				Colored.			
	Deaths.	Estimated White Population.	Deaths Per 10,000.	Per Cent. of Total Deaths.	Deaths.	Estimated Colored Population.	Deaths Per 10,000.	Per Cent. of Total Deaths.
Under 5 Years.....	93	114,048	8.15	5.93	63	25,928	24.30	6.98
5 to 10 Years.....	15	110,151	1.36	0.96	23	25,743	8.93	2.55
10 to 15 Years.....	17	107,276	1.58	1.08	43	24,536	17.53	4.77
15 to 20 years.....	98	106,725	9.18	6.25	114	23,375	48.77	12.64
20 to 25 Years.....	185	101,667	18.20	11.80	132	23,561	56.02	14.63
25 to 30 Years.....	180	90,790	19.83	11.48	139	21,007	66.17	15.41
30 to 35 Years.....	198	80,738	24.52	12.63	87	16,574	52.49	9.65
35 to 40 Years.....	166	77,005	21.56	10.59	98	16,620	58.96	10.86
40 to 45 Years.....	132	66,265	19.92	8.42	71	13,533	52.46	7.87
45 to 50 Years.....	114	57,402	19.86	7.27	41	11,467	35.75	4.55
50 to 55 Years.....	105	50,514	20.79	6.70	41	9,401	43.61	4.55
55 to 60 Years.....	83	37,613	22.07	5.29	9	6,105	14.74	1.00
60 to 65 Years.....	68	30,269	22.47	4.34	19	5,153	36.87	2.11
65 to 70 years.....	50	23,235	21.52	3.19	7	3,760	18.62	0.78
70 to 75 Years.....	31	15,402	20.13	1.98	7	2,507	27.92	0.78
75 to 80 Years.....	20	8,801	22.72	1.28	5	1,207	41.42	0.55
80 to 85 Years.....	9	5,908	15.23	0.57	2	1,068	18.72	0.22
85 to 90 Years....								
90 to 100 Years....								
100 Years & Over..	4	937	42.69	0.26	1	511	19.57	0.11
Unknown.....								
Total.....	1,568		100.02		902		100.02	

TUBERCULOSIS 1912

COMPARATIVE CHART GIVING DEATHS PER 10000 AT VARIOUS AGE PERIODS MARYLAND WHITE AND COLORED

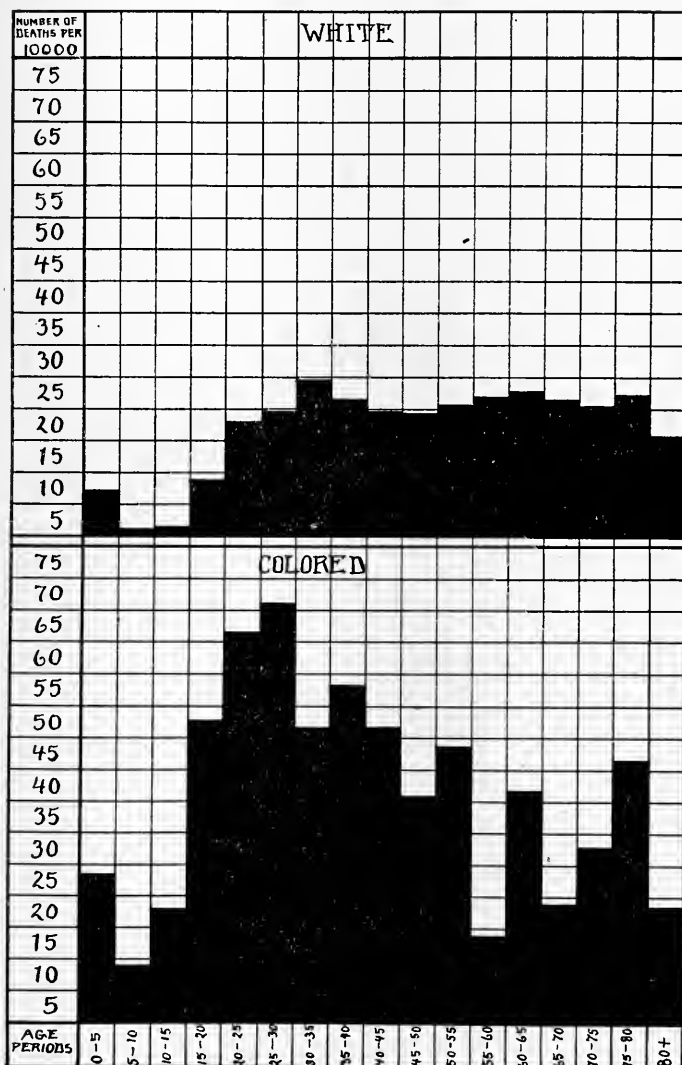


CHART 8.

TUBERCULOSIS 1912

COMPARATIVE CHART—DEMONSTRATING THE PERCENTAGE OF DEATHS AT VARIOUS AGE PERIODS OF ALL DEATHS FROM TUBERCULOSIS WHITE AND COLORED MARYLAND

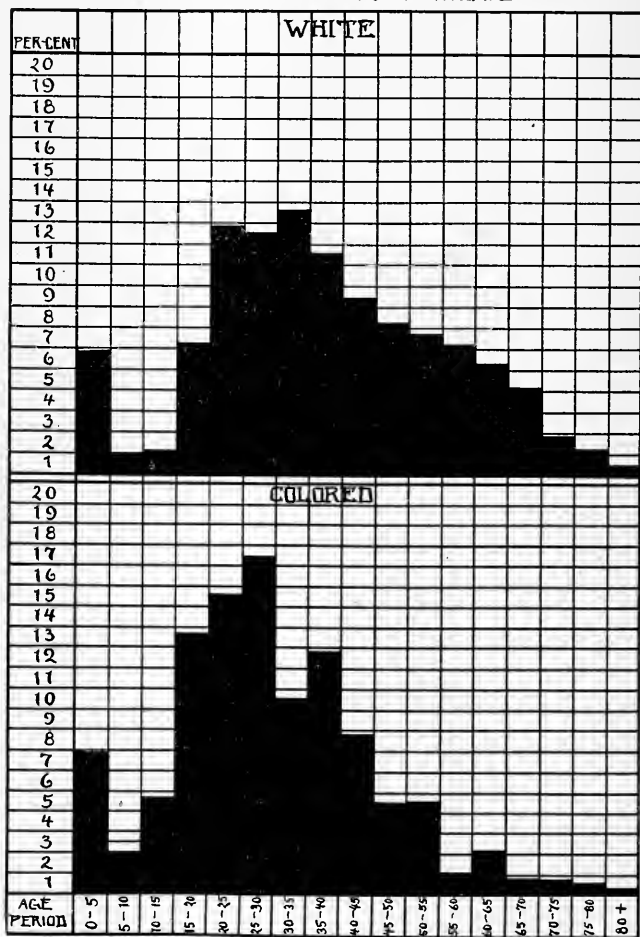


CHART 9.

TABLE XVI—A.

DEATHS PER 10,000 FROM TUBERCULOSIS—WHITE AND COLORED—MARY-
LAND—1912.

	<i>White.</i>	<i>Colored.</i>
Allegany.....	7.18	33.62
Anne Arundel.....	7.41	30.91
Baltimore	16.75	25.76
Calvert	22.57	15.91
Caroline	10.06	22.45
Carroll	9.70	5.03
Cecil	10.82	30.88
Charles	9.01	33.50
Dorchester	11.34	42.51
Frederick	13.67	28.42
Garrett	3.42	....
Harford	6.98	34.22
Howard	4.86	35.64
Kent	15.91	44.02
Montgomery	8.57	27.53
Prince George's.....	11.16	28.93
Queen Anne's.....	11.08	40.32
Somerset	16.38	39.38
St. Mary's.....	11.13	7.20
Talbot	9.35	33.12
Washington	10.52	34.23
Wicomico	14.15	20.29
Worcester	14.02	21.25
Total 23 Counties.....	11.65	28.91
Baltimore City.....	17.96	55.70
Total Maryland.....	14.46	38.86

The deaths from tuberculosis of non-residents of Baltimore City are not included in these figures.

TUBERCULOSIS 1912

COMPARATIVE CHART—DEMONSTRATING EXCESS OF DEATHS FROM TUBERCULOSIS
IN THE COLORED POPULATION OF RURAL MARYLAND. DEATHS PER 10000
OF WHITE AND COLORED POPULATION BY COUNTIES

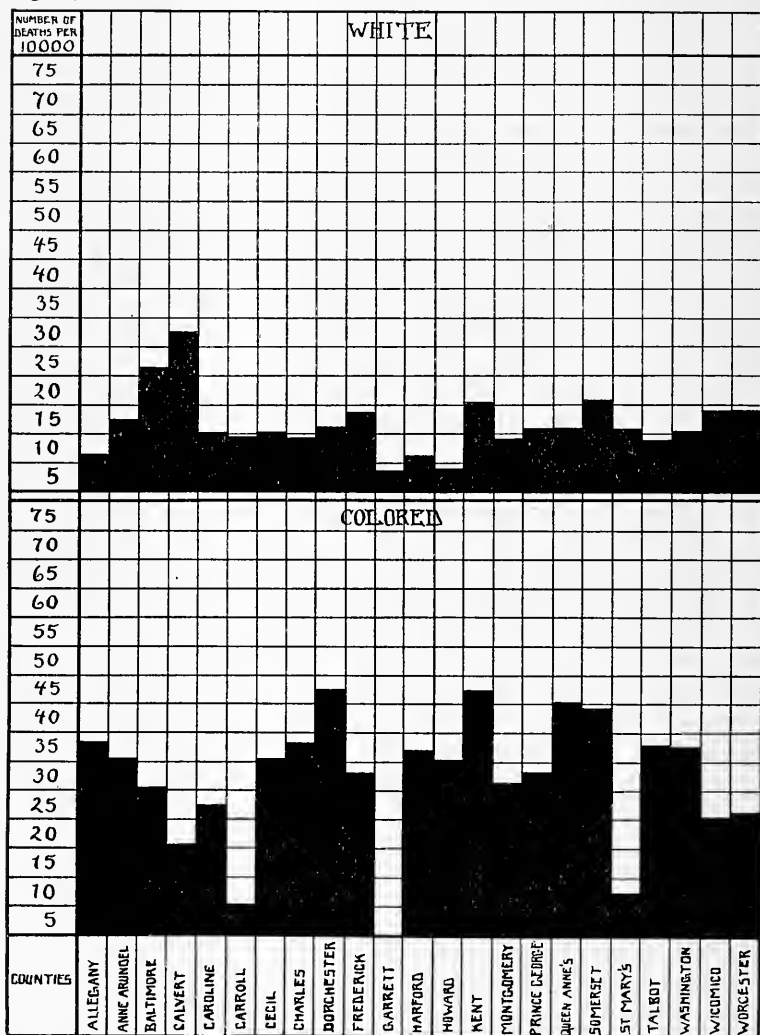


CHART 10.

For the purpose of making a special study of typhoid fever in rural Maryland, Tables XVII and XVII-A have been introduced. Table XVII gives the deaths from typhoid fever during 1912 by ages, deaths per 10,000 of population at the age periods, percent of deaths in each age period of total deaths for both the white and colored population. This table shows for the white population that the per cent. of deaths from this cause is higher in the first quinquennial period (6.59%) than in the second quinquennial period (5.04%) after which the percentage rises to the period of 20-25 when it reaches its maximum (15.12%). From there on there is a gradual decline with a few variations until the age period of 70-75 years. However, when we observe in the first column the number of deaths per 10,000 of population living at various age periods, the fact will become evident that this disease is just as prevalent among persons over forty years as those under. There is some slight difference after the 40th year but this is due in a great measure to the fact that a proportion of the population at these years has become immune through an attack of this infection. In the colored population the figures demonstrate the same condition as in the white population except that the maximum percentage of deaths has reached an earlier age period (10-15). The variation in the figures for the colored population beginning with 45 years is due in a great measure to the lack of knowledge of ages. Table XVII-A gives the deaths per 10,000 of the population by counties from typhoid fever. The greatest number of deaths per 10,000 among the white population was in Baltimore county, 11.81; Garrett county second with 5.37. The figures in this county would doubtless be considerably higher if the returns had been accurate. The lowest number of deaths per 10,000 of the white population was in Calvert county from which county there were no deaths reported in the year 1912 from this disease. The maximum number of deaths per 10,000 of the colored population occurred in Allegany county, 13.45; Somerset county, 10.21 and Caroline county, 10.21 were next in order. The minimum death rate per 10,000 among the colored population occurred in Carroll county from which county there were no deaths reported from this cause. The death rate for Garrett county is defective.

TABLE XVII.

TYPHOID FEVER, 1912—GIVING DEATHS BY AGES—DEATHS PER 10,000 OF POPULATION AT AGE PERIODS—PER CENT. OF DEATHS IN EACH AGE PERIOD OF TOTAL DEATHS—WHITE AND COLORED—MARYLAND.

Ages.	White.				Colored.			
	Deaths.	Estimated White Population.	Deaths Per 10,000.	Per Cent. of Total Deaths.	Deaths.	Estimated Colored Population.	Deaths Per 10,000.	Per Cent. of Total Deaths.
Under 5 Years.....	17	114,048	1.49	6.59	13	25,928	5.01	12.26
5 to 10 Years.....	13	110,151	1.18	5.04	12	25,743	4.66	11.32
10 to 15 Years.....	14	107,276	1.31	5.43	19	24,536	7.74	17.92
15 to 20 Years.....	37	106,725	3.47	14.34	16	23,375	6.84	15.09
20 to 25 Years.....	39	101,667	3.84	15.12	9	23,561	3.82	8.49
25 to 30 Years.....	28	80,790	3.08	10.85	7	21,007	3.33	6.60
30 to 35 Years.....	30	80,738	3.72	11.63	7	16,574	4.22	6.60
35 to 40 Years.....	19	77,005	2.47	7.36	6	16,620	3.61	5.66
40 to 45 Years.....	19	66,265	2.87	7.36	5	13,533	3.69	4.72
45 to 50 Years.....	9	57,402	1.57	3.49	5	11,467	4.36	4.72
50 to 55 Years.....	13	50,514	2.57	5.04	0	9,401	0.00	0.00
55 to 60 Years.....	6	37,613	1.60	2.33	5	6,105	8.19	4.72
60 to 65 Years.....	8	30,269	2.64	3.10	0	5,153	0.00	0.00
65 to 70 Years.....	5	23,235	2.15	1.94	0	3,760	0.00	0.00
70 to 75 Years.....	0	15,402	0.00	0.00	1	2,507	3.99	0.94
75 to 80 Years.....	1	8,801	1.14	0.39	0	1,207	0.00	0.00
80 to 85 Years.....	0	5,908	0.00	0.00	0	1,068	0.00	0.00
85 to 90 Years.....								
90 to 100 Years....								
100 Years & Over..	0	937	0.00	0.00	1	511	19.57	0.94
Unknwn.....	0							
Total.....	258			100.01	106			99.98

TYPHOID FEVER 1912
COMPARATIVE CHART GIVING DEATHS PER 10000 AT VARIOUS
AGE PERIODS MARYLAND WHITE AND COLORED

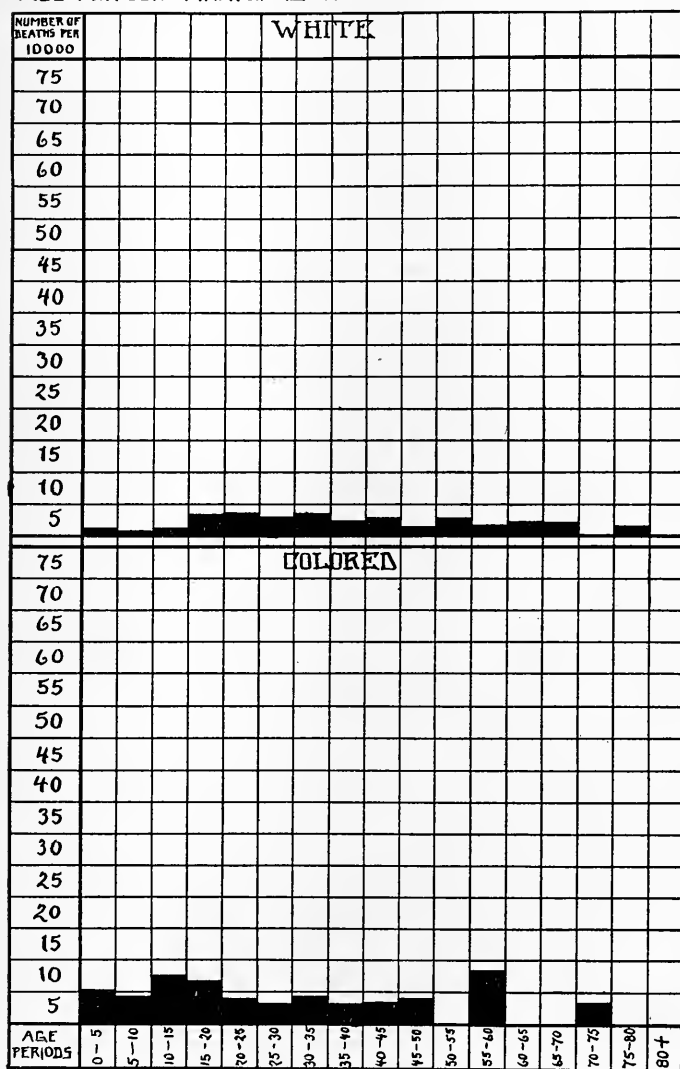


CHART 11.

TYPHOID FEVER 1912

COMPARATIVE CHART- DEMONSTRATING THE PER-CENTAGE OF DEATHS AT VARIOUS AGE PERIODS OF ALL DEATHS FROM TYPHOID FEVER WHITE AND COLORED MARYLAND

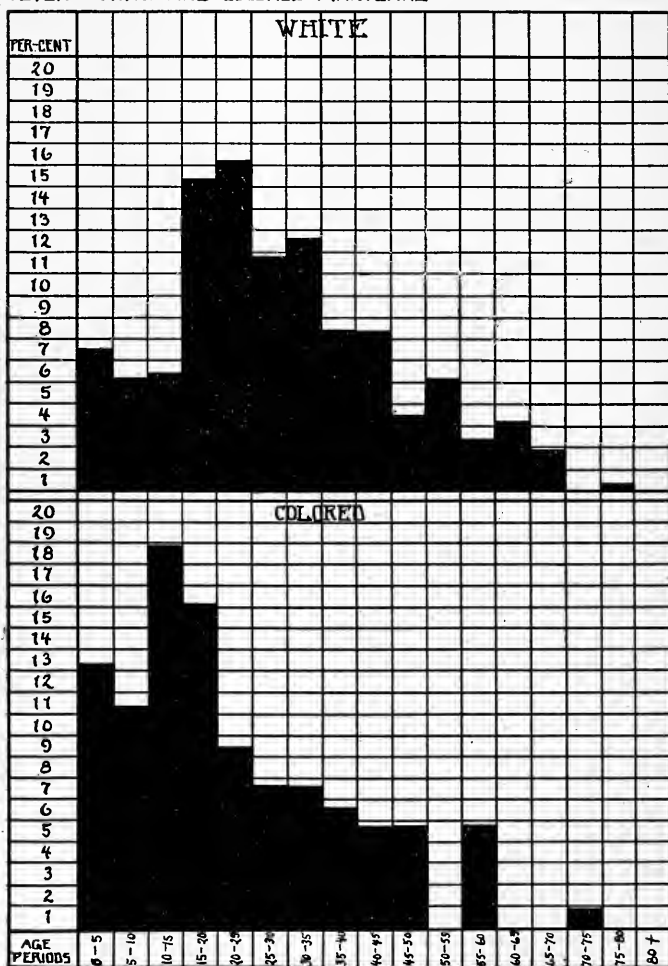


CHART 12.

TABLE XVII—A.

DEATHS PER 10,000 FROM TYPHOID FEVER—WHITE AND COLORED—MARY-
LAND—1912.

	<i>White.</i>	<i>Colored.</i>
Allegany	3.67	13.45
Anne Arundel.....	1.56	8.63
Baltimore	11.81	3.90
Calvert	0.00	7.95
Caroline	0.67	10.21
Carroll	0.94	0.00
Cecil	3.93	3.09
Charles	2.57	3.59
Dorchester	4.64	9.57
Frederick	2.10	3.79
Garrett	5.37	0.00
Harford	0.44	8.05
Howard	3.24	2.74
Kent	0.94	5.08
Montgomery	0.43	2.20
Prince George's.....	0.38	2.63
Queen Anne's.....	4.62	3.51
Somerset	4.09	10.21
St. Mary's.....	2.02	1.03
Talbot	0.78	7.53
Washington	3.30	4.89
Wicomico	5.19	7.80
Worcester	3.34	5.67
Total 23 Counties.....	2.44	5.55
Baltimore City.....	2.30	2.90
Total Maryland.....	2.38	4.57

TYPHOID FEVER 1912

COMPARATIVE CHART-DEMONSTRATING EXCESS OF DEATHS FROM TYPHOID FEVER IN THE COLORED POPULATION OF RURAL MARYLAND. DEATHS PER 10000 OF WHITE AND COLORED POPULATION BY COUNTIES.

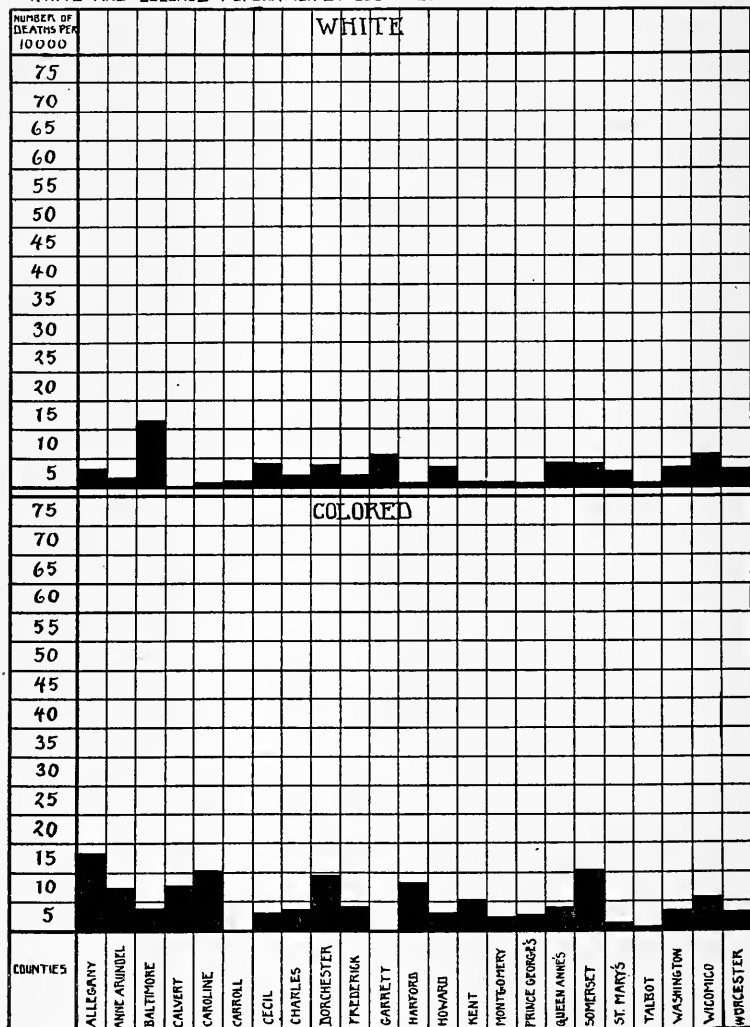


CHART 13.

In Table XVIII the principal diseases are divided according to the percentages occurring in the three periods of life already used, with the exception of senile debility, congenital debility, infantile convulsions, unspecified and ill-defined causes, the three former of which fall by reason of their classification in only one period of life.

Deaths in the middle period of life have an importance from the economic standpoint far greater than those occurring in either extreme of life. In Chart 14, the principal causes of death are arranged according to their importance as causes of death, between the ages of 15 and 45 years, for the State of Maryland.

Tuberculosis of the lungs still easily retains first place on this chart. Accidental violence, which ranks tenth in Table XV, comes in second place with this arrangement; Bright's disease is third and heart disease fourth, while certain of the diseases which are large factors in the general death rate fall to the lower portion of the scale. Some of these diseases are: paralysis, malignant neoplasms and cerebral hemorrhage.

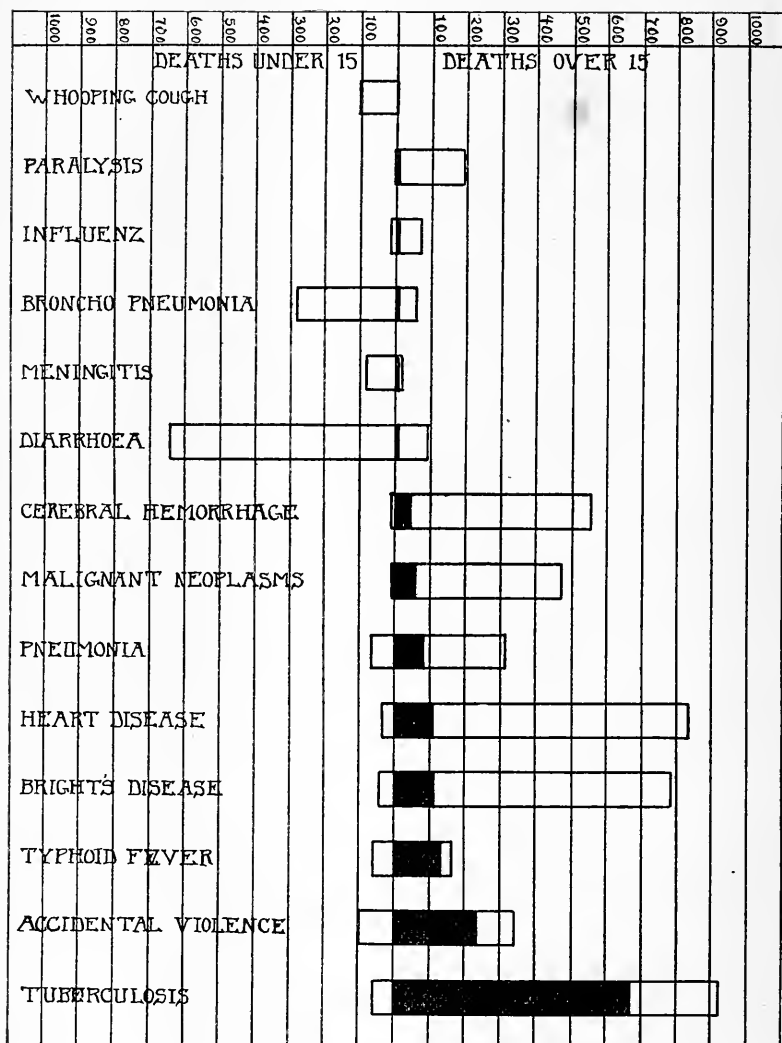


CHART 14—Principal Causes of Death, Classified According to their Importance in the Middle Period of Life.

Age Distribution of Principal Diseases.

TABLE XVIII.

DEATHS FROM FIFTEEN PRINCIPAL CAUSES IN MARYLAND (EXCLUSIVE OF BALTIMORE CITY), 1912. SHOWING NUMBER AND PERCENTAGE OF DEATHS IN EACH OF THREE AGE PERIODS.

	Number.	<i>Per Cent. in Each Period.</i>
TYPHOID FEVER.		
Under 15.....	63	27.63
15 to 45.....	131	57.46
45 and over.....	33	14.47
Age unknown.....	1	0.44
Total.....	228	
PARALYSIS.		
Under 15.....	2	0.98
15 to 45.....	6	2.94
45 and over.....	192	94.12
Age unknown.....	4	1.96
Total.....	204	
BRIGHT'S DISEASE.		
Under 15.....	40	4.79
15 to 45.....	114	13.64
45 and over.....	674	80.62
Age unknown.....	8	0.95
Total.....	836	
WHOOPING COUGH.		
Under 15.....	103	99.04
15 to 45.....	....	....
45 and over.....	1	0.96
Total.....	104	
HEART DISEASE.		
Under 15.....	30	3.44
15 to 45.....	109	12.51
45 and over.....	728	83.58
Age unknown.....	4	0.46
Total.....	871	
MALIGNANT NEOPLASMS.		
Under 15.....	4	0.83
15 to 45.....	61	12.76
45 and over.....	413	86.40
Total.....	478	
BRONCHO-PNEUMONIA.		
Under 15.....	290	81.01
15 to 45.....	9	2.51
45 and over.....	59	16.48
Total.....	358	

TABLE XVIII—*Continued.*

	<i>Number.</i>	<i>Per Cent. in Each Period.</i>
ACCIDENTAL VIOLENCE.		
Under 15.....	99	21.81
15 to 45.....	239	52.64
45 and over.....	102	22.47
Age unknown.....	14	3.08
Total.....	454	
TUBERCULOSIS (LUNGS AND LARYNX).		
Under 15.....	59	5.97
15 to 45.....	673	68.05
45 and over.....	254	25.68
Age unknown.....	3	0.30
Total.....	989	
PNEUMONIA.		
Under 15.....	71	18.07
15 to 45.....	88	22.39
45 and over.....	230	58.52
Age unknown.....	4	1.02
Total.....	393	
CEREBRAL HEMORRHAGE.		
Under 15.....	7	1.24
15 to 45.....	42	7.45
45 and over.....	512	90.78
Age unknown.....	3	0.53
Total.....	564	
DIARRHOEA AND ENTERITIS.		
Under 15.....	642	86.87
15 to 45.....	13	1.76
45 and over.....	84	11.36
Total.....	739	
INFLUENZA.		
Under 15.....	14	15.38
15 to 45.....	9	9.89
45 and over.....	68	74.73
Total.....	91	
MENINGITIS.		
Under 15.....	85	84.15
15 to 45.....	12	11.88
45 and over.....	4	3.96
Total.....	101	
OTHER CAUSES.		
Congenital Debility (under 1 year).....	572	
Senile Debility (over 55 years).....	402	
Convulsions of Children (less than 10 years) ..	88	
Unspecified or Ill-Defined Causes.....	220	

The age distribution of the principal causes of death is shown in Charts Nos. 15, 16, 17, 18 and 19. The age distribution of the general mortality is shown in Chart No. 15. These charts illustrate the age distribution of the principal causes of death, with the exception of senile debility, congenital debility and infantile convulsions (whose age distribution is fixed by their classification) and the unclassified diseases. By referring to Chart No. 15 it will be seen that, as has been shown in previous charts, 26.51% of the general mortality occurs under the age of 5. The curve rapidly declines to the ages between 10 and 15 years, 1.66% when the lowest actual mortality is reached. The actual number of deaths thereafter remains fairly uniform until after the 50th year, when the number of deaths increases. The general mortality ranges below 5% for all periods except the first quinquennium and the quinquennial periods after 60. *Lobar Pneumonia* has an age distribution corresponding closely to the age distribution of general mortality. If the pneumonia and broncho-pneumonia curves were combined, the analogy would appear even more striking. This fact shows that the term pneumonia, as generally employed, is a very generic one, and relates to a number of diseases, mostly infectious, of which pneumonia is the terminal or secondary symptom. Both pneumonia and broncho pneumonia are important causes of death only at the extremes of life. After the age of 10 years broncho-pneumonia forms a small factor in the mortality, except for persons over 65, although it will be seen from the chart the very large proportion of deaths it causes in the first 5 years of life. *Broncho-pneumonia* and *whooping cough* have an almost wholly infantile distribution. 96.15% of the deaths from whooping cough occurs in the first five years of life; 2.88% in the age period of 5-10. Diphtheria which was not included in this list for the past 3 years has again assumed importance as one of the twenty principal causes of death. 65.45% of all deaths from this cause appears in the first quinquennium and 18.18% in the second.

Organic diseases of the heart, malignant neoplasms, cerebral hemorrhage, paralysis and Bright's disease occur almost entirely in the late periods of life. The mortality from cerebral hemorrhage rises above 5% at the 45th year, and increases rapidly thereafter and reaches its fastigium between 70 and 75. Malignant neoplasms rise above 5% at from 40 to 45 and reaches its greatest height at from 60-65. Bright's disease rises above 5% between 45 and 50; paralysis between 50 and 55 and organic heart disease between 50 and 55.

Tuberculosis—The greatest number of deaths from pulmonary tuberculosis occurs in early adult life. It will be noted in the chart that the mortality reaches slightly over 5% from the age period of 0 to 15 years when there is a rapid rise, the curve reaching its fastigium at 20 to 25 years, and declining more slowly until it passes below the 5% line at 55-60 years.

Typhoid Fever—The greater number of cases of typhoid fever occur in early adult life. The fastigium is reached at 15 to 20 years. It passes below 5% from 45 to 50 years. After 65 years the mortality becomes very small.

The curve for *accidental violence* has two apices—one in the first quinquennial period, and the other in the fourth quinquennial period. That is, the periods of danger from accidental violence are infancy and adolescence. The causes of accidental violence in infancy are due to the inability of the children to protect themselves and to the carelessness of parents. Burns and scalds account for a large portion of the mortality, and accidental drowning for a further considerable portion. A large number of these deaths are among the children of colored persons and foreigners, and are due, on the one hand, to the carelessness in handling fire, and on the other, to the ready access to water afforded by the Maryland coast line and Chesapeake Bay and its tributaries. The high mortality at ages from 20 to 25 may be accounted for by the fact that a large number of young men commence their industrial careers at this age, and handle machinery before they have learned the necessity of care and the experience necessary to avoid accident. The percentages given on these charts are shown in the following table

TABLE XIX.

AGE DISTRIBUTION OF MORTALITY FROM TWELVE DISEASES BY PERCENTAGES, RURAL DISTRICTS, 1912.

<i>Causes of Death.</i>	0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 and over	Unknown.
Typhoid Fever.....	8.76	7.46	11.40	14.47	13.16	7.89	9.65	6.58	5.70	3.51	3.51	4.38	1.32	0.87	0.44	0.44	0.00	0.44
Whooping Cough.....	96.15	2.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.00
Tuberculosis, Pul.....	2.02	1.11	2.83	10.01	14.15	12.64	12.94	10.62	7.68	4.95	5.36	4.04	4.15	2.53	2.12	1.92	0.61	0.30
Pneumonia	13.79	3.05	1.27	3.05	2.80	3.82	4.07	4.33	4.33	3.82	5.60	6.36	7.12	10.94	8.91	5.85	9.92	1.02
Broncho-Pneumonia ...	76.82	3.91	0.28	0.56	0.00	0.56	0.28	0.00	1.12	0.84	0.28	0.56	0.84	2.23	3.63	3.07	5.03	0.00
Organic Heart Disease.	2.07	0.80	0.57	1.15	2.07	1.38	0.92	2.76	4.25	4.48	5.28	7.35	10.79	14.12	14.12	13.66	13.78	0.46
Paralysis.....	0.98	0.00	0.00	0.00	0.98	0.49	0.00	0.00	1.47	3.92	6.37	6.86	11.76	12.75	21.57	14.71	16.18	1.96
Bright's Disease.....	2.87	1.20	0.72	1.79	1.20	1.91	2.15	2.63	3.95	6.22	7.18	8.37	10.05	12.68	16.51	9.81	9.81	0.96
Accidental Violence....	9.91	5.51	6.39	9.47	11.67	11.89	7.05	7.71	4.85	5.07	3.30	3.30	1.76	2.20	2.42	0.88	3.52	3.08
Malignant Neoplasms...	0.63	0.00	0.21	0.42	0.00	1.46	2.93	2.72	5.25	8.79	12.34	13.18	15.71	14.23	9.41	5.86	6.90	0.00
Diphtheria	65.45	18.18	10.00	4.55	0.00	0.00	0.00	1.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cerebral Hemorrhage...	1.06	...	0.17	0.35	0.35	0.53	0.89	2.13	3.19	5.50	8.60	10.11	11.17	14.54	18.62	9.93	12.23	0.53
Deaths, all causes.....	26.51	1.99	1.66	3.00	3.51	3.47	3.47	3.61	3.52	3.78	4.63	4.91	5.85	6.97	7.65	6.16	8.05	0.69

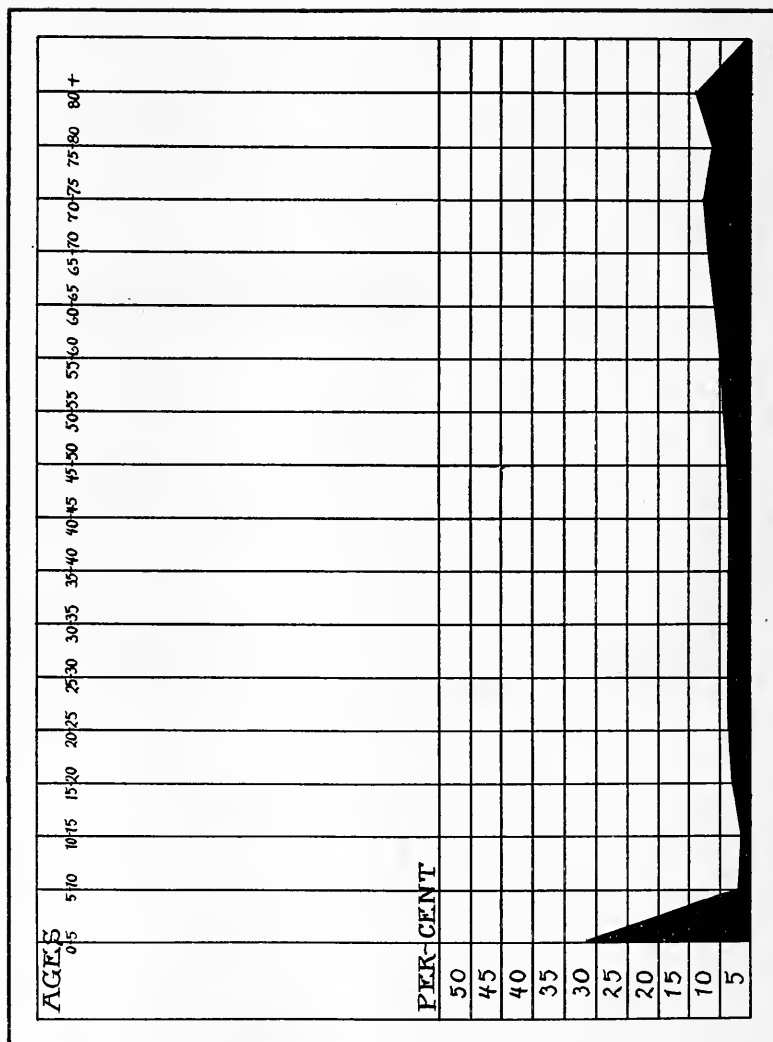


CHART 15—Age Distribution of General Mortality 1912.

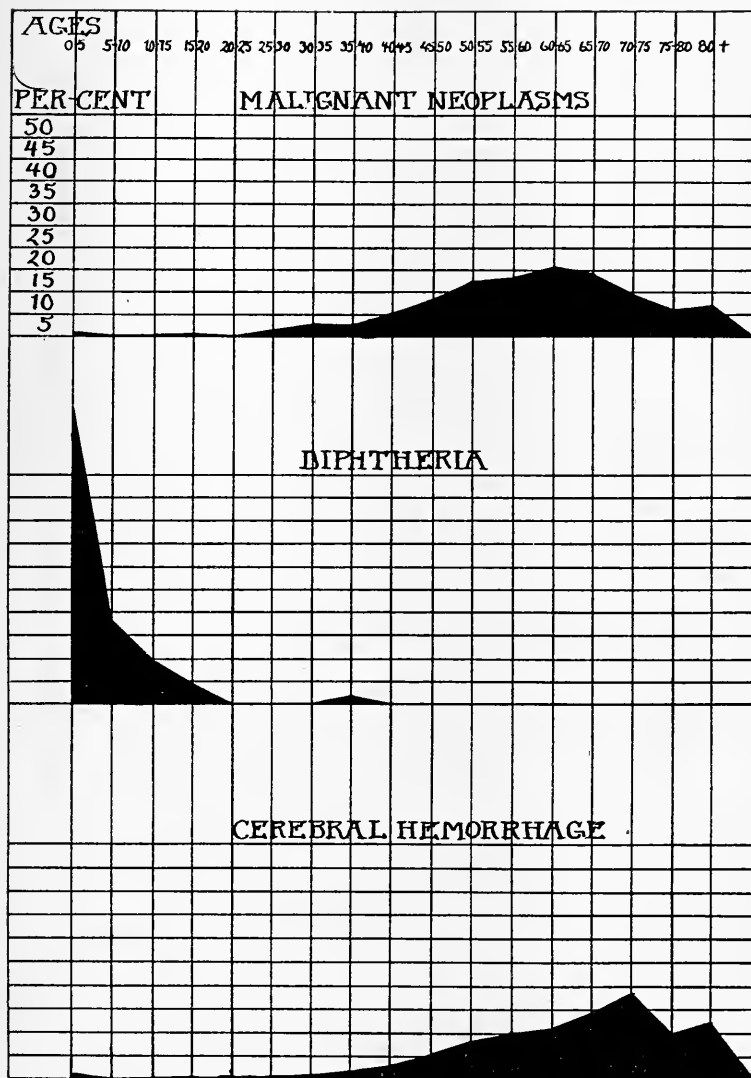


CHART 16.

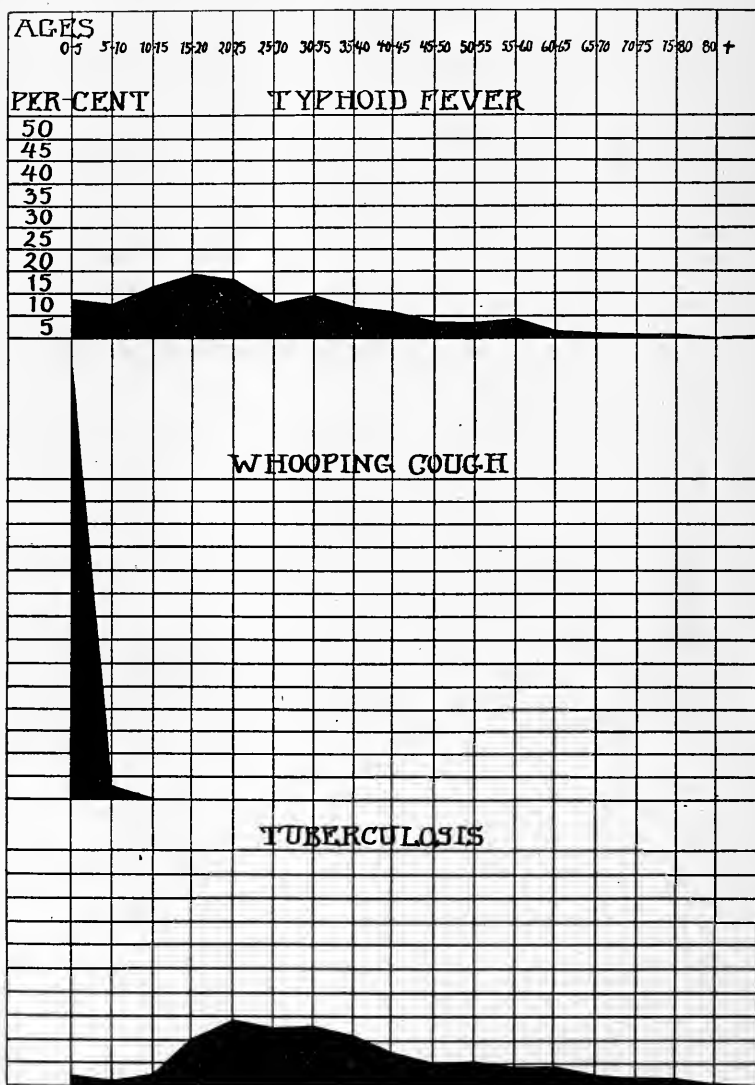


CHART 17.

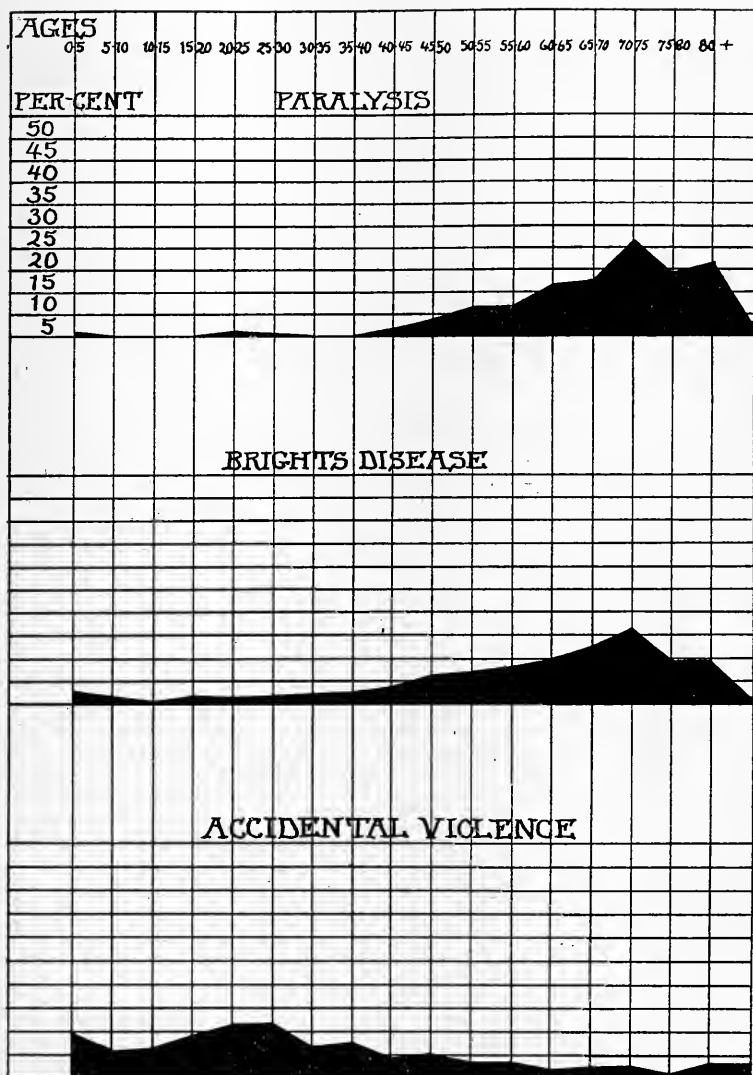


CHART 18.

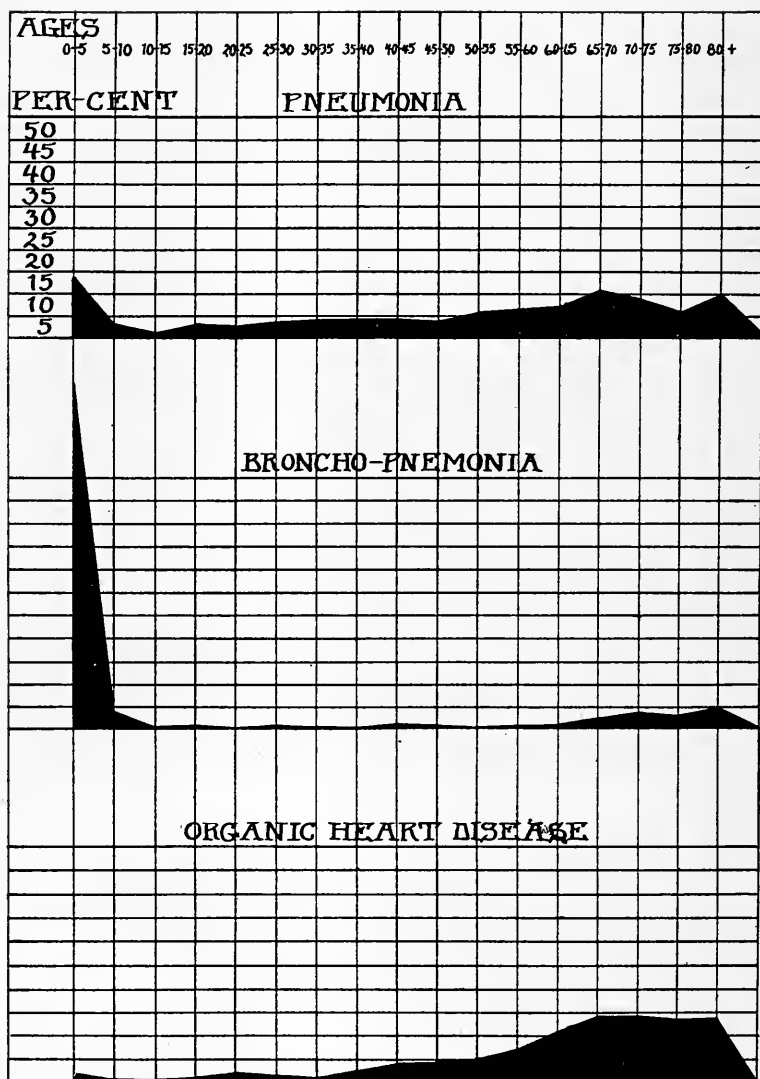


CHART 19.

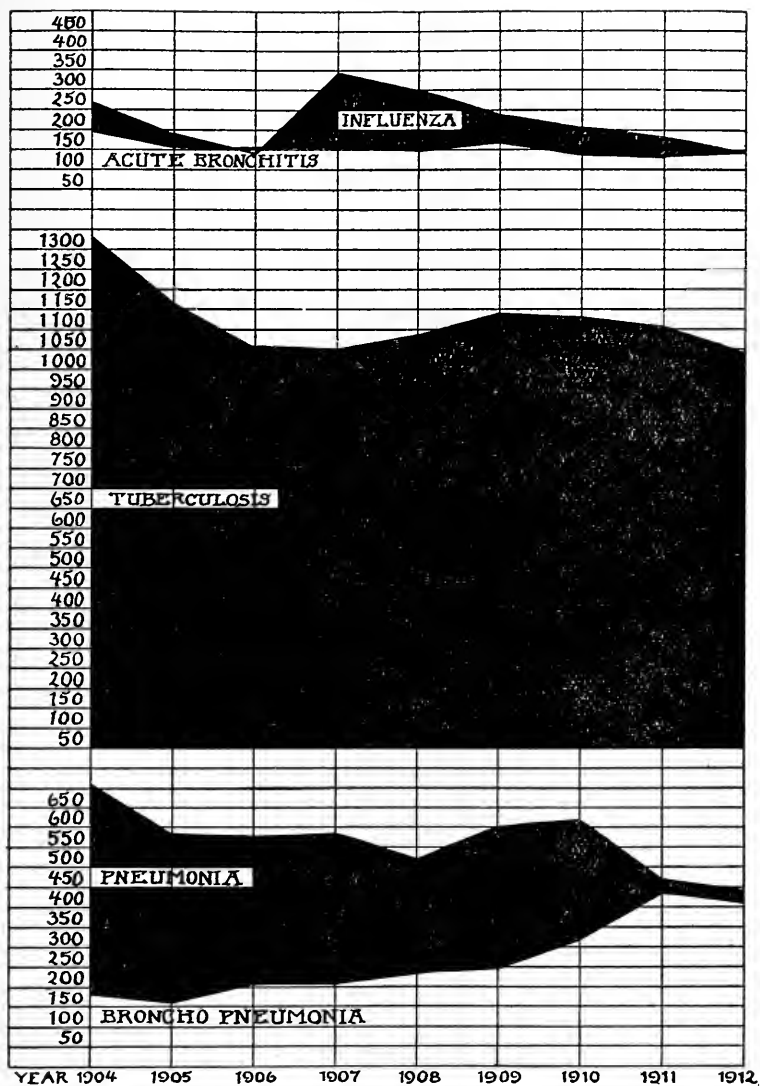


CHART 20—Mortality from Five Respiratory Diseases, 1904-1912.

It will be seen by reference to the preceding table that the influenza figures have shown marked variations. The heaviest influenza mortality occurred in the year 1907, 287 deaths, or a proportionate mortality of 2.93%. In consonance with the epidemic mortality from influenza the pneumonia figures show a like elevation. The same is to be observed in the year of 1904, and also in 1908, when a similar epidemic of influenza appears to have prevailed in the rural districts. While there has been a decrease in deaths from this cause in 1909 and 1910, there is a noted increase in the deaths from pneumonia. The year 1912 gives the lowest mortality from influenza for the past six years and next to the lowest mortality for nine years. There is a notable decrease in the deaths from broncho and lobar pneumonia. The variations in the figures of acute bronchitis are not of special interest, as the majority of these should either go in the pneumonia of influenza column. The broncho pneumonia figures which have remained fairly steady from 1905 to 1907 took a decided drop in the year 1908 then followed two years (1909 and 1910) of high mortality with a decided decrease in the year of 1911 and a substantial decrease in 1912. The figures for pulmonary tuberculosis have shown a decline for the past four years, the most marked decrease having been in the year 1912 which shows a decrease of 69 deaths when compared with the figures for 1911. The association and interdependence of these diseases is shown on the accompanying chart (Chart 20). The exciting cause in determining the mortality from these diseases is probably influenza, which is highly contagious and always epidemic once or more annually.

TABLE XXI.

DEATHS FROM TUBERCULOSIS—RURAL MARYLAND—1912.

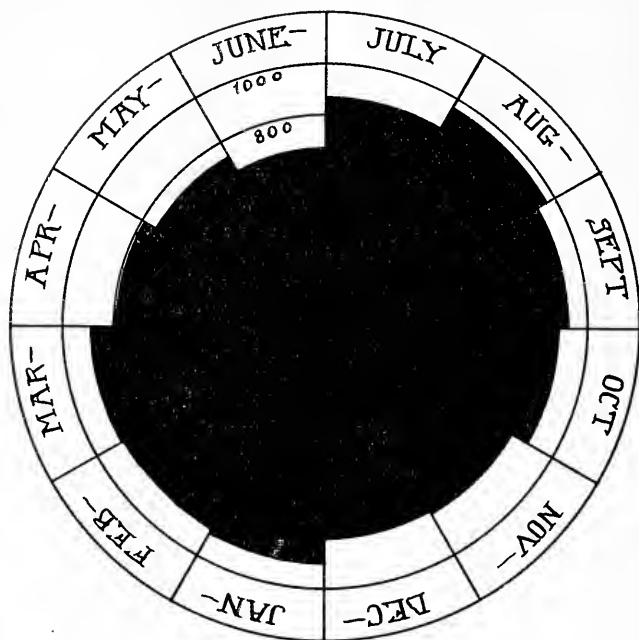
<i>Year.</i>	<i>Male.</i>	<i>Female.</i>
1905.....	457	670
1906.....	484	535
1907.....	464	536
1908.....	459	576
1909.....	498	602
1910.....	562	620
1911.....	499	559
1912.....	492	497
Average for 8 years.....	489	574
Median population.....	375,090	361,276
Death Rate, per 10,000.....	13.04	15.89

It would appear that tuberculosis, being a chronic disease, would not show any notable seasonal or annual variations, but it is evident from an examination of this chart, as well as those of seasonal mortality and the above table (Table No. XXI), that tuberculosis shows variations corresponding with the acute epidemic respiratory diseases. The reason for this is evidently to be found in the influence of the acute infections, especially pneumonia and influenza, in determining the deaths of tuberculous persons. Following years of influenza epidemics, the tuberculosis mortality should show a considerable decline, owing to the elimination of a considerable number of advanced consumptives. This appears to have occurred in 1905. Coincident with the number of cases of influenza in the past four years there has been a corresponding decrease in the number of deaths from tuberculosis. It can be easily understood that this fall need not necessarily take place at all as it is well known that influenza not only determines death in tuberculosis many times, but that it may bring to an acute or advanced stage many consumptives who were previously in a chronic, non-progressive stage. The average for 9 years shows a decrease in the number of deaths from tuberculosis. While the number of deaths from influenza has shown a steady decline since 1907 there has been a steady rise in the number of deaths from broncho-pneumonia from this date to the year 1911 where it has reached its maximum 383 deaths, and still retains third place in Table XX, deaths from five principal respiratory diseases.

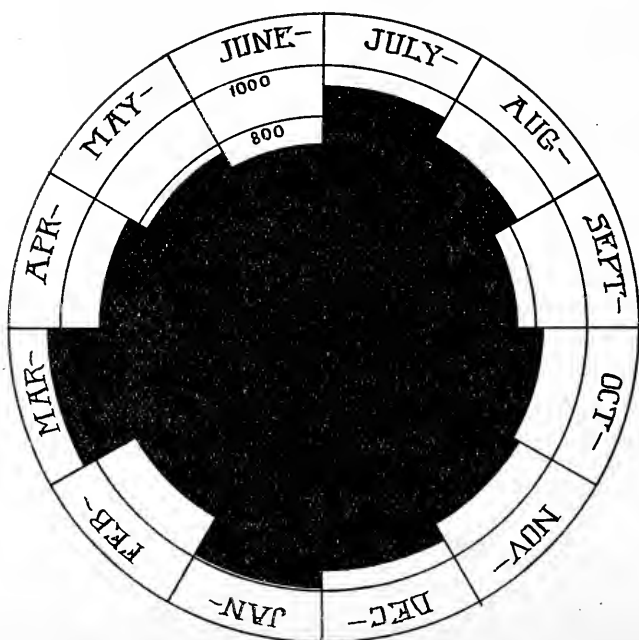
Seasonal Incidence of the Mortality.

The seasonal incidence of the general mortality is shown separately for Baltimore and the rural districts in Chart No. 21.

It will be seen that the monthly mortality, as shown in the black portion of the charts, is of somewhat oval shape, with the poles lying in the winter and summer months, which are the seasons of greatest mortality. Generally speaking, the mortality may be divided into two classes—diseases of the intestines, prevalent in the summer months, and diseases of the lungs, prevalent in the winter. The gastro-intestinal diseases reach their fastigium in the height of the summer. August is the month of greatest mortality in the rural districts, while in Baltimore City, March is the month of greatest mortality. June is the month of least mortality in Baltimore City and in the rural districts. The expansion of the black portion of the chart during July and August is due almost entirely to the acute gastro-intestinal diseases of children and cholera infantum. The mortality during the winter months is due mainly to pneumonia and influenza. While the summer mortality affects mainly children, the winter mortality affects both extremes of life (infancy and old age). The sudden rise from the months of low mortality, May and June, to the months of high mortality, July and August, produces a very notable eccentricity in the figures. This is more marked in the city, where the mortality increases suddenly during the month of July. In the rural districts the rise in the mortality is somewhat slower, and the fall does not become marked until the end of September. The circles on the charts indicate the actual number of deaths in the two specified divisions of Maryland. While the population of Baltimore and the rural districts are nearly equal, the mortality in Baltimore City is considerably higher, as appears in the chart. In the rural districts there are three months in which the number of deaths is less than 800, while in Baltimore City there are only two months in which the number of deaths falls below 800. A comparison of this chart with that of the preceding year, shows a marked correspondence in the general figures of the rural and urban districts. The figure of the chart is apparently not subject to many changes, although it may rotate somewhat, either to a later or an earlier season. In the winter months, March furnished the highest mortality. In 1911, August furnished the highest mortality for the rural districts and January for Baltimore City.



RURAL DISTRICTS



BALTIMORE

In the following table the deaths by months for six years, ending 1912 are given for Baltimore City and the rural districts (Table XXII). From this table it appears that August is the month of greatest mortality in the country, while in the city, January is the month of greatest mortality. May is the month of least mortality in the rural districts and in Baltimore City June is the month of least mortality.

The seasonal prevalence of eight prominent causes of death are given in the succeeding chart, No. 22.

In considering seasonal prevalence, two classes of diseases must be recognized—

1. Acute fatal diseases, where the period of infection corresponds more or less closely with the period of death.
2. Chronic fatal diseases, where the date of death is separated by a long interval from the date of infection.

The influence of pneumonia and influenza upon the tuberculosis mortality will be seen at a glance at the chart. The chronic degenerative diseases, cerebral apoplexy, heart disease and Bright's disease, show little seasonal variation, and are apparently not much dependent upon acute infection. The pneumonia curve and influenza curve always correspond very closely. The gastro-intestinal diseases show a marked antithesis to pneumonia in their seasonal distribution. The mortality from acute gastro-intestinal infections shows the greatest seasonal variation of any of these diseases, as already observed. To illustrate the striking influence of influenza and pneumonia upon tuberculosis, the curves of these diseases, together with those of acute bronchitis and broncho-pneumonia, have all been introduced in Chart No. 22.

TABLE XXII.

DEATHS BY MONTHS FOR 1912, 1911, 1910, 1909, 1908, 1907.

Years.	Rural Districts.						Baltimore City.							
	1912	1911	1910	1909	1908	1907	Total 6 Years.	1912	1911	1910	1909	1908	1907	Total 6 Years.
January.....	901	902	881	828	980	898	5,390	996	993	1,067	875	1,201	1,041	6,173
February.....	885	843	889	772	888	914	5,191	925	871	968	757	859	923	5,303
March.....	899	953	831	910	847	890	5,330	1,056	989	940	984	961	1,075	6,005
April.....	790	803	757	872	754	745	4,721	869	932	875	986	889	917	5,468
May.....	744	690	678	721	721	670	4,224	780	902	775	829	776	826	4,888
June.....	678	662	686	788	772	641	4,227	701	728	798	759	816	722	4,524
July.....	862	1,004	965	985	983	861	5,660	922	929	981	988	1,065	1,058	5,943
August.....	964	1,017	882	932	951	1,066	5,812	830	855	920	910	807	1,068	5,390
September.....	920	848	802	714	789	887	4,960	747	752	805	808	757	832	4,701
October.....	890	713	783	737	727	795	4,645	836	798	834	835	725	884	4,912
November.....	817	730	802	700	708	712	4,469	850	801	860	772	780	839	4,902
December.....	806	721	819	803	729	713	4,591	929	854	930	873	799	1,005	5,390
Total.....	10,156	9,886	9,775	9,762	9,849	9,792	59,220	10,441	10,404	10,753	10,376	10,435	11,190	63,599

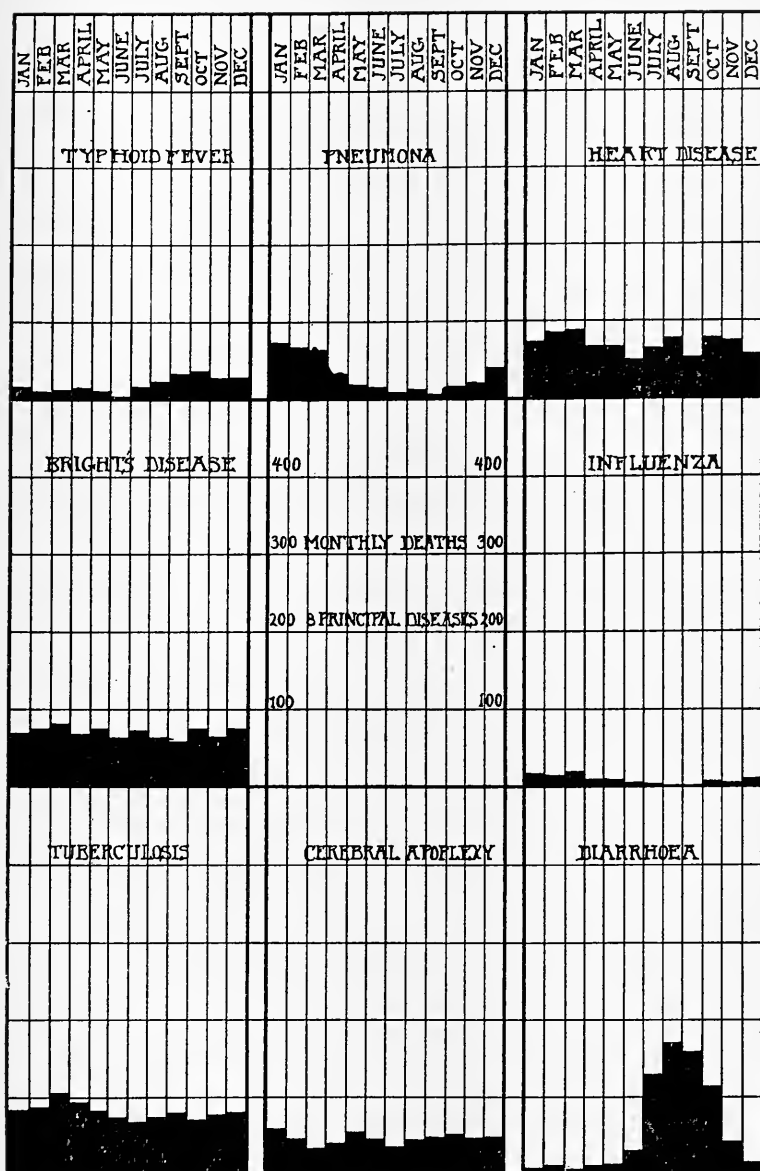


CHART 22.

REPORT OF THE

EIGHT PROMINENT CAUSES OF DEATH BY MONTHS—RURAL DISTRICTS—
1912.

TYPHOID FEVER.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
16	9	10	13	8	3	15	22	35	36	30	31

PNEUMONIA.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
76	69	68	37	21	16	9	10	5	16	24	42

HEART DISEASE.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
77	89	92	72	72	54	64	79	57	80	78	57

BRIGHT'S DISEASE.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
60	74	81	70	77	65	74	67	59	75	62	72

INFLUENZA.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
19	16	19	9	9	2	1	0	0	4	2	10

TUBERCULOSIS.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
84	90	103	95	84	76	67	75	80	73	80	82

CEREBRAL HEMORRHAGE.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
58	44	35	43	59	51	39	46	48	49	46	46

DIARRHOEA.

<i>Jan.</i>	<i>Feb.</i>	<i>March.</i>	<i>April.</i>	<i>May.</i>	<i>June.</i>	<i>July.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
11	15	10	15	16	34	131	174	159	115	42	17

Infections of Organs.

The succeeding table and chart (Chart 23, Table XXIII), show the comparative susceptibility of the several organs to infection. In general, the table and charts have been arranged so as to show infections of the special organs. The total number of deaths considered in this table is 8,584, or about two-fifths of the total mortality. Certain other important classes of diseases, such as degenerations, congenital diseases and accidents, are not considered in this tabulation.

It will be seen by reference to the table and chart that the mass of the inflammatory diseases affect the lungs and alimentary canal, infections of the lungs ranking very much higher than those of the other organs.

The special predilection of the tubercle bacillus for the lung has been previously recognized, but the fact that the majority of pathogenic organisms find in the lungs their most favorable habitat is not so well recognized. The organisms of the enteric group are, of course, an exception to this rule.

TABLE XXIII.

PARASITIC DISEASES, SHOWING THE ORGAN AFFECTED.

	<i>Rural Dists.</i>	<i>Baltimore City.</i>	<i>Mary- land.</i>
<i>Respiratory Infections.</i>			
Influenza, laryngeal and pulmonary tuberculosis, bronchitis, broncho-pneumonia, pneumonia, pleurisy, pulmonary gangrene.....	1998	2484	4482
<i>Systemic Infections, Principally Respiratory.</i>			
Measles, scarlet fever, whooping cough, diphtheria.....	249	154	403
<i>Infections of the Alimentary Tract.</i>			
Typhoid fever, cholera, dysentery, abdominal tuberculosis, gastritis, diarrhœa and enteritis, peritonitis, appendicitis.....	1271	963	2234
<i>Infections of the Urinary Tract.</i>			
Perinephritis, pyonephrosis, pyelitis, cystitis, nephrolithiasis.....	34	39	73
<i>Systemic Infections, Principally of the Kidneys.</i>			
Acute nephritis.....	114	150	264
<i>Infections of the Nervous System.</i>			
Rabies, meningeal tuberculosis, encephalitis, meningitis, tetanus, chorea.....	181	220	401
<i>Systemic Infections, Not Localized in Any Organ or Tissue.</i>			
Pyemia and septicæmia, general tuberculosis, syphilis.....	82	179	261
<i>Infections of the Skin.</i>			
Erysipelas, gangrene, abscess and furuncle, dermatitis.....	50	58	108
<i>Systemic Infections, Principally of the Skin.</i>			
Smallpox	0	0	0
<i>Arthritic Infections.</i>			
Acute rheumatism.....	29	35	64
<i>Systemic Infections, Principally Arthritic.</i>			
Chronic rheumatism, gout.....	20	16	36
<i>Infections of the Female Organs of Reproduction.</i>			
Endometritis, metritis, salpingitis, puerperal septicæmia.....	36	64	100
<i>Infections of the Liver.</i>			
Cholangitis, hepatitis, cholelithiasis.....	40	33	73
<i>Infections of the Bones.</i>			
Tuberculosis, osteomyelitis.....	22	40	62
<i>Infections of the Blood.</i>			
Malaria	15	8	23
Total.....	4141	4443	8584

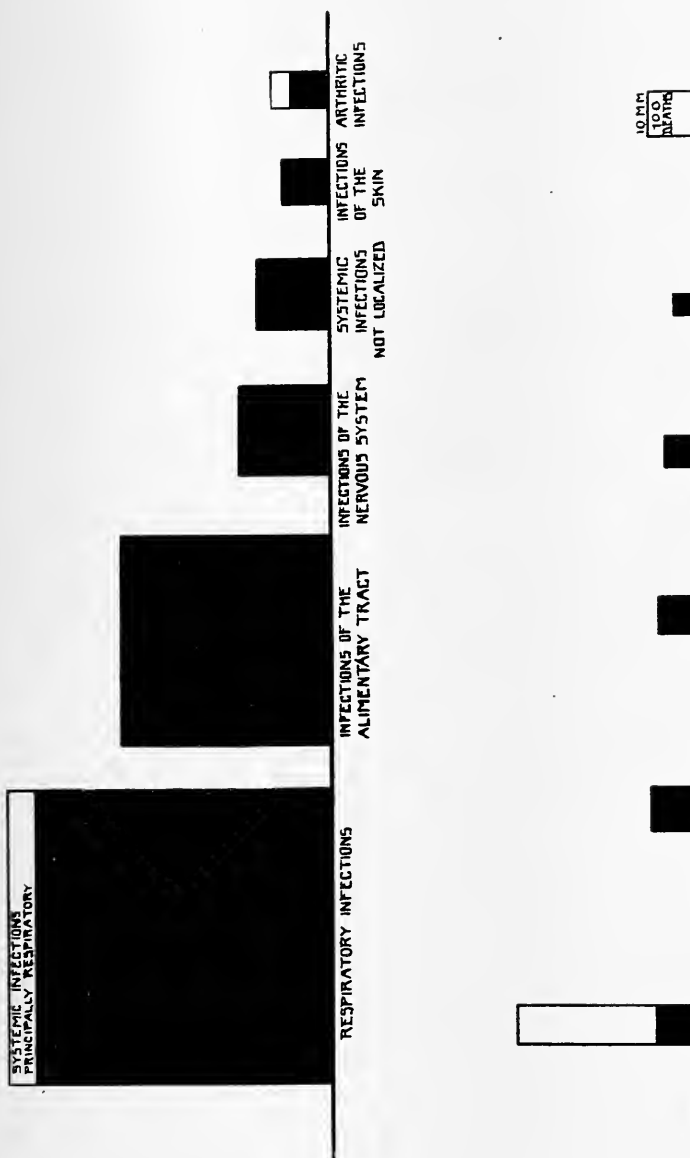


CHART 23.—Comparative Susceptibility of the Several Organs to Parasitic Infections.
Maryland Mortality 1912.

Special Causes of Death.

Tables A, B and C, at the end of the report on Vital Statistics, give the causes of death, the number of each race and sex, the number dying in each county, the age at death, and the seasonal distribution of the mortality for the 189 principal causes of death recognized in the international classification.

Many of the diseases recognized in this classification are only important causes of mortality during epidemics, and are not commonly prevalent in this State. Others are limited to Europe, or the smaller geographical or climatic divisions.

Among the diseases of the international classification, from which there were no deaths in Maryland during 1912, were typhus fever, relapsing fever, miliary fever, Asiatic cholera, bubonic plague, yellow fever and leprosy.

Smallpox—Deaths in Baltimore City, none. Deaths in the rural districts in Maryland, none. During 1905 there was one death from smallpox in the rural districts, which occurred in Calvert county. During 1906, 1907, 1908, 1909, 1910 and 1911, there were no deaths from smallpox either in Baltimore City or in the rural districts.

Rabies—There were no deaths in the rural districts or in Baltimore City. There were two deaths reported from hydrophobia in 1906. In 1905 there were no deaths from this cause. In 1907 there were no deaths. In 1908 there were 6 deaths, and in 1909 one death. No deaths in 1910 and 1911.

Alcoholism—Deaths in Baltimore City, 49; in the counties, 49; total, 98.

Occupational Poisonings—No deaths from this cause occurred in Baltimore City or the rural districts during 1912.

Encephalitis, Meningitis, Epilepsy and Insanity—There were in the rural districts, 18 deaths from encephalitis and 101 deaths from meningitis. In Baltimore City, 2 deaths from encephalitis and 110 from meningitis. From other forms of insanity there occurred 61 deaths in the rural districts and 5 in

Baltimore City; the excess of deaths from other forms of mental alienation in the counties is due in a great measure to the fact that the State Hospitals for the care of the insane are all located in the rural districts. There were 44 deaths in the rural districts from epilepsy and 15 in Baltimore City.

Tetanus—Deaths in the rural districts, 26; deaths in Baltimore City, 32; total 58. The greatest number of deaths was in Frederick county, 4; Allegany, Anne Arundel, Baltimore and Somerset counties second in order each with 3; Cecil, Charles and Wicomico counties third in order, 2 cases having been reported from each of these counties. In 1905 Frederick county stood first, with 7 deaths. Anne Arundel county second, with 5 deaths. In 1906 Anne Arundel county stood first, with 5 deaths. In 1907 Baltimore county stood first, with 7 deaths; Charles county second, with 4, and Allegany and Anne Arundel counties third, each with 3 deaths. In 1908 Anne Arundel county stood first and in 1909, Allegany. As shown by the figures for the rural districts, out of 26 deaths, 14 occurred in the first year of life. Although this factor of the mortality is a small one, it is always easily preventable, and the painful and fatal nature of the disease should inspire the physicians in the infected districts to endeavor to have all possible precautions used for its prevention, especially to instruct the nurses having charge of the new-born in the simple and necessary measure of asepsis.

Intestinal Parasites—Deaths in the rural districts, 2; in Baltimore City, 0; total, 2. The most common intestinal parasite causing deaths in the United States is the *Uncinaria Americana*. Not more than a dozen cases of this disease have been reported in Maryland.

Pregnancy—Deaths from this cause numbered 106 in rural districts and 105 in Baltimore City. About one-half of this mortality is distinctly preventable, namely, nearly all forms of puerperal septicemia, and most of the mortality from hemorrhage.

Suicide—Deaths in the rural districts, 66; deaths in Baltimore City, 88; total, 154. The most common form of suicide was by firearms, 44. The second most common cause was suicide by poisoning, 38; hanging ranks third, 29.

Accidental Violence—Among the special forms of violence, other than mechanical, accidental submersion ranks first, 167; and burns and scalds next, 125. Among the deaths from acci-

dental violence, Baltimore county furnished the highest proportion of the total mortality. Total deaths, rural districts, 454, and Baltimore City, 323; total, 777. Allegany county ranks second, while Anne Arundel is third. None of the other counties returned a proportionate mortality, the lowest being St. Mary's county, where 4 deaths due to this cause were reported in 1912.

Drowning—There were 167 deaths from this cause in Maryland during 1912, against 140 during 1911, and 128 during 1910.

Electrical Shock—In the rural districts there were 7 deaths from lightning and 6 from electricity (lightning excepted); in Baltimore City there were no deaths from lightning and 6 from electricity (lightning excepted). The deaths in the rural districts were as follows: Baltimore county 6, Allegany and Somerset each 2, and Anne Arundel, Carroll and Washington counties each 1; total, 13.

Unspecified and Undefined Causes—The number of unknown and unspecified causes of death occurring in 1912 was 305. This classification does not include the number of absolutely indefinite causes, such as hemorrhage, dropsy, sudden death and convulsions.

Duration of Life.

The third important element in the statistical consideration of the population is the duration of life. The main purpose in the organization of sanitary jurisdictions is to increase the duration of life, and the executive powers and functions of the jurisdiction should always be directed to this point.

The duration of life is usually shown statistically by tables illustrating the mean duration and expectancy of life of those living at given ages.

These tables were considered by Dr. Farr to represent the health and prosperity of the country, and to furnish a fair estimate of its living capital. Dr. Farr considered a table constructed in this way to be a measure of the *life* of the community, and hence it was called by him a *biometer*.

Other tables, popularly used by insurance companies, are tables of *survivorship* and tables showing the probability of living for a stated period at a given age—the *probability of living one year* being the factor generally employed in the construction of this class of tables.

The tables of duration of life are frequently graphically shown by a system of co-ordinates of age and duration, or age and expectancy. These graphic curves have great illustrative value in vital statistics, but tables and curves of duration of life are open to some objections for sanitary purposes.

From the method of construction of this class of tables only mean figures can be determined—the extremes of either great or brief duration of life are largely lost, and the eccentricities of the curve, which are of great sanitary importance, are not apparent.

All tables of duration of life are prognostic of the future, the conditions of life in any given year being assumed to remain constant during a future period of years, *i. e.*, 100 or 50 years. The particular problem which interests the sanitarian is, at what period of life does the mortality occur? His problem is directed in general to increasing the duration of life, and the

results of the work will show in the small number of deaths in the early periods of life, and the increase in the number of deaths at an advanced age. This calculation is best stated in tables and charts of survivorship. Such tables and charts should illustrate in the population of the State, under sanitary conditions present in the year of calculation, the number of the population living and the number dead at succeeding age period.

The "Average Age of Death" may be taken appropriately in connection with the duration of life. This factor is determined by adding the ages of the decedents and dividing them by the number of decedents. A short discussion of the real meaning of the average age at death is necessary, in view of the fallacy, especially prevalent among a number of American statisticians, that an increase in the average age at death indicates necessarily a corresponding increase in the duration (expectancy) of life. It is evident that in many American communities such figures would be especially fallacious, as in many communities, made up of young adults and children, the average age at death will be low, while later, as the older portion of the population becomes numerous, the average age at death will be high, notwithstanding the fact that there may have been no change in the death rate. On the other hand, in a community with a definite, fixed, non-fluctuating population, the average age at death and the expectation of life at birth will be identical; because it is evident that all of such a living population will eventually become dead, and assuming no change in the conditions under which the population is living, and making observations for a sufficient number of years, we can determine the average length of time lived during this period by the deceased persons. It follows that the population living will die in the same proportion and at the same ages as the population dead (assuming the conditions to remain constant).

Thus, in 1912 there were 10,156 deaths in the rural districts of Maryland. Of these, 10,067 occurred at known ages. Taking the sum of these ages, the 10,067 persons were found to have lived 402605.960 years, giving an average age at death of 39.993 years. As before stated, this number should be identical with the duration of life in a fixed population, therefore, the term "presumptive duration of life" may be applied to this factor in the succeeding table constructed as here described. The table of presumptive duration and presumptive expectancy is constructed as follows:

If we tabulate the decedents dying over the age of one year during 1912, we find 8,127 persons to have died, after living a total of 402,112.970 years, giving an average at death of 49.479 years. This figure is entered in the table, under the heading, "*Presumptive Duration of Life.*" Since this figure includes one year which has already been lived, the expectation of those decedent over one year will be, at the age of one year, 48.479 years. This factor appears in the table, under the heading "*Presumptive Expectation of Life.*"

The factors of this calculation are shown in the first two columns of Table XXIV, while in the last two columns, headed respectively "*Presumptive Duration*" and "*Presumptive Expectancy,*" are given the presumptive expectation and duration of life by one-year periods.

Method of Calculation—To determine the total years lived by any number of decedents, the correct method is evidently to add the ages of all the decedents and divide the sum by the number of decedents. This method involves, however, a considerable amount of labor, and vital statisticians generally, who make this calculation, employ the median age between the two age periods, multiplied by the number of decedents during the same period.

By the aid of one of the standard adding machines it has been possible to take out the age of each individual of the 10,067 decedents of known ages in the rural districts of Maryland and to secure a very accurate result. The ages were returned by years and months, the months being entered as decimal fractions of a year.

All registrations in which the number of days of the age of the decedent was given were returned with an additional month, if over fifteen days, and the additional days dropped, if under fifteen days.

Thus the maximum error of any individual entry was only 0.0416 years. In any large series of entries the error should not exceed 0.001.

The following decimals were used for months, each being carried to the third place—one month, .083; two months, .166; three months, .249; four months, .333; five months, .416; six months, .499; seven months, .583; eight months, .686; nine months, .749; ten months, .833; eleven months, .916; twelve months, 1.000.

By reference to Table XXIV it will be seen that the presumptive duration of life steadily increases from the third year upwards, and the presumptive expectancy steadily diminishes.

The presumptive expectancy of life is greatest at 3 years, being greater than at birth (49.917, as compared with 48.479). At birth the expectancy and duration of life are identical, but after birth the expectancy increases to the third year, and thereafter steadily decreases, although the expectancy remains above that at birth up to the eleventh year.

While the table of presumptive expectation and duration of life is not to be relied upon as an accurate measure of real expectation of life, such as is furnished by actuarial tables, its simplicity of construction and value for purposes of comparison should make its use a necessity in all reports on vital statistics.

The figures over the age of 80 years are only included in the table for the interest they may possess, as they have no value for comparison, owing to the small number of entries and the marked annual fluctuation in deaths over 80.

TABLE XXIV.

PRESUMPTIVE EXPECTANCY AND DURATION OF LIFE—RURAL DISTRICTS—
MARYLAND—1912.

<i>Deaths Over the Age of</i>	<i>Number</i>	<i>Total Years Lived.</i>	<i>Presumptive Duration— Years.</i>	<i>Presumptive Expectancy at Age.</i>
1 year.....	8,127	402,112.970	49.479	48.479
2 years.....	7,741	401,596.151	51.879	49.879
3 ".....	7,582	401,220.408	52.917	49.917
4 ".....	7,472	400,848.191	53.647	49.647
5 ".....	7,394	400,511.332	54.167	49.167
6 ".....	7,336	400,202.320	54.553	48.553
7 ".....	7,285	399,877.347	54.891	47.891
8 ".....	7,251	399,627.700	55.113	47.113
9 ".....	7,217	399,343.865	55.334	46.334
10 ".....	7,188	399,076.798	55.520	45.520
11 ".....	7,162	398,807.353	55.684	44.684
12 ".....	7,133	398,477.057	55.863	43.863
13 ".....	7,085	397,884.453	56.159	43.159
14 ".....	7,059	397,534.843	56.316	42.316
15 ".....	7,018	396,946.617	56.561	41.561
16 ".....	6,975	396,284.577	56.815	40.815
17 ".....	6,221	395,399.151	57.130	40.130
18 ".....	6,857	394,286.527	57.501	39.501
19 ".....	6,770	392,691.528	58.004	39.004
20 ".....	6,712	391,572.700	58.339	38.339
21 ".....	6,646	390,221.716	58.715	37.715
22 ".....	6,581	388,836.997	59.085	37.085
23 ".....	6,490	386,812.138	59.601	36.601
24 ".....	6,412	384,992.496	60.042	36.042
25 ".....	6,356	383,627.377	60.357	35.357
26 ".....	6,282	381,754.870	60.770	34.770
27 ".....	6,220	380,126.458	61.114	34.114
28 ".....	6,151	378,240.160	61.492	33.492
29 ".....	6,074	376,058.881	61.913	32.913
30 ".....	6,007	374,093.580	62.276	32.276
31 ".....	5,921	371,496.295	62.742	31.742
32 ".....	5,865	369,741.117	63.042	31.042
33 ".....	5,790	367,315.255	63.440	30.440
34 ".....	5,716	364,852.573	63.830	29.830
35 ".....	5,660	362,933.909	64.123	29.123
36 ".....	5,573	359,865.840	64.573	28.573
37 ".....	5,519	357,905.300	64.850	27.850
38 ".....	5,445	355,143.665	65.224	27.224
39 ".....	5,358	351,814.016	65.661	26.661
40 ".....	5,291	349,179.941	65.995	25.995
41 ".....	5,202	345,643.404	66.444	25.444
42 ".....	5,140	343,082.075	66.747	24.747
43 ".....	5,059	339,659.105	67.139	24.139
44 ".....	4,987	336,540.884	67.484	23.484
45 ".....	4,933	334,151.323	67.738	22.738
46 ".....	4,856	330,670.619	68.095	22.095
47 ".....	4,784	327,383.587	68.433	21.433
48 ".....	4,720	324,358.757	68.720	20.720
49 ".....	4,634	320,209.960	69.100	20.100
50 ".....	4,555	316,315.617	69.444	19.444
51 ".....	4,459	311,495.143	69.857	18.857
52 ".....	4,393	308,105.382	70.136	18.136
53 ".....	4,292	302,828.154	70.556	17.556
54 ".....	4,192	297,499.277	70.968	16.968

TABLE XXIV—*Continued.*PRESUMPTIVE EXPECTANCY AND DURATION OF LIFE—RURAL DISTRICTS—
MARYLAND—1912.

<i>Deaths Over the Age of</i>	<i>Number</i>	<i>Total Years Lived.</i>	<i>Presumptive Duration— Years.</i>	<i>Presumptive Expectancy at Age.</i>
55 "	4,091	292,017.525	71.380	16.380
56 "	3,981	285,935.150	71.825	15.825
57 "	3,889	280,747.515	72.190	15.190
58 "	3,788	274,958.703	72.587	14.587
59 "	3,675	268,379.785	73.029	14.029
60 "	3,585	263,040.943	73.373	13.373
61 "	3,437	254,132.010	73.940	12.940
62 "	3,336	247,933.869	74.321	12.321
63 "	3,218	240,583.045	74.762	11.762
64 "	3,108	233,617.727	75.167	11.167
65 "	2,993	226,219.607	75.583	10.583
66 "	2,865	217,874.769	76.047	10.047
67 "	2,743	209,774.898	76.476	9.476
68 "	2,593	198,676.323	76.620	8.620
69 "	2,432	188,681.916	77.583	8.583
70 "	2,284	178,417.402	78.116	8.116
71 "	2,089	164,724.739	78.853	7.853
72 "	1,961	155,593.821	79.344	7.344
73 "	1,792	143,367.447	80.004	7.004
74 "	1,651	133,021.460	80.570	6.570
75 "	1,510	122,537.450	81.150	6.150
76 "	1,336	109,445.392	81.920	5.920
77 "	1,207	99,604.947	82.522	5.522
78 "	1,090	90,557.421	83.080	5.080
79 "	966	80,842.543	83.688	4.688
80 "	873	73,458.471	84.145	4.145
81 "	737	62,547.661	86.868	3.868
82 "	633	54,075.347	85.427	3.427
83 "	541	46,500.765	85.953	2.953
84 "	467	40,327.557	86.355	2.355
85 "	377	32,740.707	86.845	1.845
86 "	304	26,519.349	87.235	1.235
87 "	241	21,857.654	90.696	3.696
88 "	196	17,930.717	91.483	3.483
89 "	158	14,660.988	92.791	2.791
90 "	125	11,712.609	93.701	3.701
91 "	92	8,735.245	94.948	3.948
92 "	74	7,089.905	95.810	3.810
93 "	59	5,708.075	96.747	3.747
94 "	47	4,586.104	97.597	3.597
95 "	35	3,454.942	98.713	3.713
96 "	32	3,168.777	99.024	3.024
97 "	24	2,399.030	99.960	2.960
98 "	18	1,814.679	100.816	2.816
99 "	15	1,520.513	101.368	2.368
100 "	13	1,322.097	101.700	1.700
101 "	6	621.515	103.586	2.586
102 "	5	519.932	103.986	1.986
103 "	4	417.932	104.483	1.483
104 "	2	211.100	105.550	1.550
106 "	1	106.000	106.000	0.000
Total.....	10,067	402,605.960	39.993	

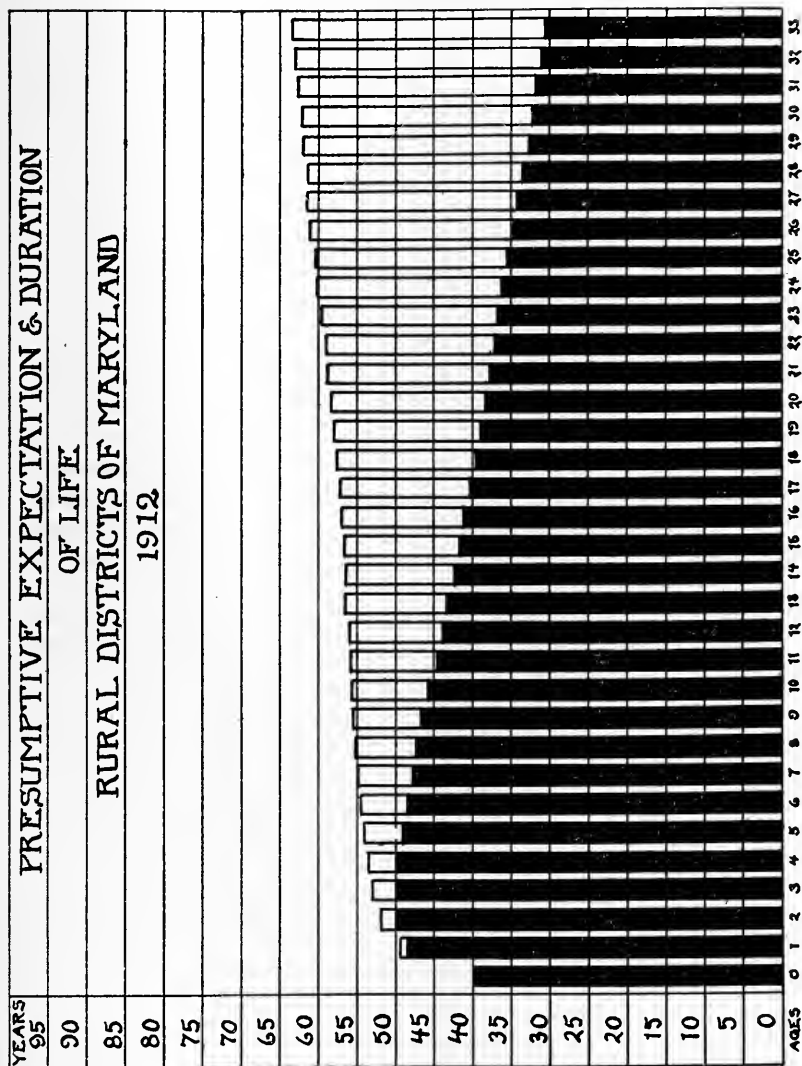


CHART 24-A.

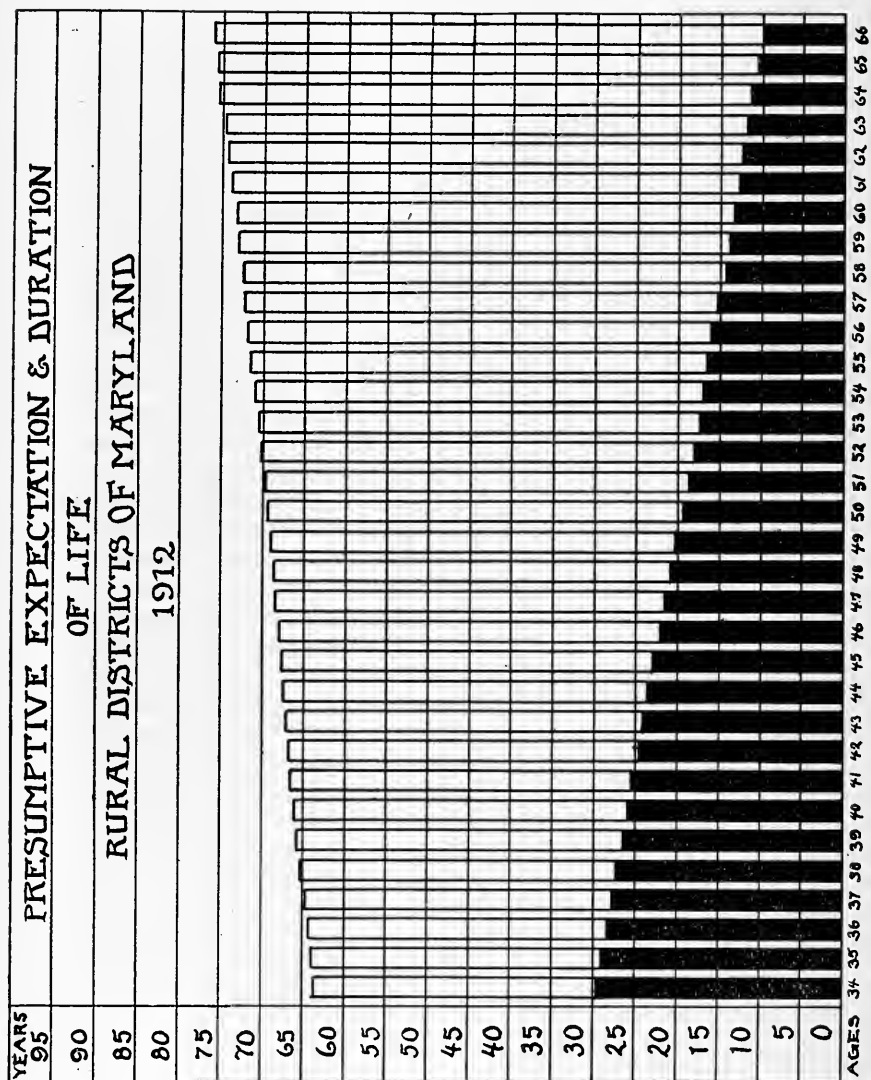


CHART 24-B.

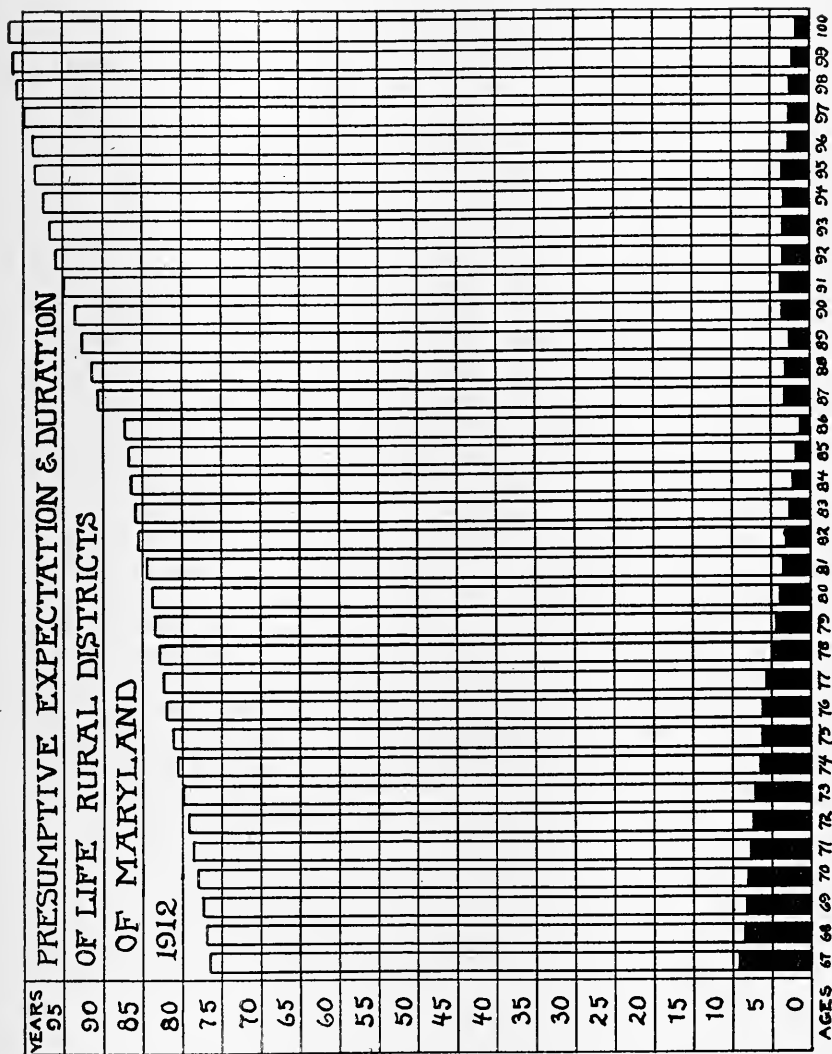


CHART 24-C.

The succeeding tables (Table XXV and Table XXVI) give the average age of death by counties and by months, respectively. The total number of persons dying at known ages differs slightly from the number in the preceding table owing to the fact that the tabulation for this table was made subsequent to the tabulation for the succeeding table and a number of belated certificates were added.

The county giving the lowest average age at death in 1912 was Calvert (32.964); the highest average of death was in Carroll county (49.853).

In general, the thinly populated rural districts furnished a high average age at death, not only because of their more favorable sanitary conditions, but because old persons form a larger part of the population of country districts. The populous districts always contain young people and children in numbers above the mean, and hence give a low average age at death.

An illuively favorable result may occur in some registration districts from defective returns. Unregistered deaths are more common in infants and children than in adults, hence the average age at death for these communities is high.

The next table (Table XXVI) gives the average age at death by months.

The analysis of this table gives very interesting results. The lowest average age at death is in August. The average age at death in this month is 36.603. It is evident that in this State with the high infant mortality in July, August and September the lowest average age at death will always fall in one of these three months.

By reference to the table it will be seen that in two summer months (July and August), in three fall months (September, October and November), the average age at death falls below the mean figure (40.052). In all the other months the figures are above the mean.

TABLE XXV.

MEAN AGE AT DEATH, BY COUNTIES—RURAL DISTRICTS—1912.

<i>Counties.</i>	<i>Total Deaths.</i>	<i>Total Age of Decedents.</i>	<i>Average Age at Death.</i>
Allegany	743	26,131.314	35.170
Anne Arundel.....	737	24,384.718	33.086
Baltimore	1,775	73,118.136	41.193
Calvert	106	3,494.138	32.964
Caroline	240	9,579.198	39.913
Carroll	463	23,081.792	49.853
Cecil	350	15,645.732	44.702
Charles	226	8,179.396	36.192
Dorchester	489	16,437.810	33.615
Frederick	759	32,833.131	43.258
Garrett	192	7,732.020	40.271
Harford	413	19,323.342	46.788
Howard	197	8,440.673	42.846
Kent	292	11,351.022	38.873
Montgomery	305	14,362.124	47.089
Prince George's.....	437	15,824.952	36.213
Queen Anne's.....	291	10,798.849	37.109
Somerset	372	13,870.819	37.287
St. Mary's.....	106	4,020.113	37.926
Talbot	281	11,600.139	41.282
Washington	723	30,798.349	42.598
Wicomico	306	11,573.005	37.820
Worcester	291	11,702.773	40.216
Total.....	10,094	404,283.545	40.052

TABLE XXVI.

MEAN AGE AT DEATH, BY MONTHS—RURAL DISTRICTS—1912.

<i>Months.</i>	<i>Total Deaths.</i>	<i>Total Age of Decedents.</i>	<i>Average Age at Death.</i>
January	897	39,319.591	43.835
February	876	39,498.355	45.089
March	894	38,582.363	43.157
April	782	33,140.582	42.379
May	742	33,091.684	44.598
June	673	26,951.090	40.046
July	852	31,161.221	36.574
August	953	32,023.395	33.603
September	918	31,147.538	33.930
October	887	33,713.345	38.008
November	817	32,481.564	39.757
December	803	33,172.817	41.311
Total.....	10,094	404,283.545	40.052

Maryland Biometer.

The particular advantages, for sanitary purposes, of tables of survivorship over other forms of life tables have already, in part, been pointed out. If such tables are shown by the graphic method it is important for the sanitarian to note not only changes in the curve as a whole, but at what period such changes occur.

As already stated, life tables of expectancy tend to obscure important eccentricities in the life curve, by reason of compensatory curves occurring later in life.

This biometer is constructed on a table of survivorship, in which 10,000 persons born in a given year are traced throughout life, under the sanitary conditions of the year of computation, as indicated by the mortality returns.

If the death rates for the several age periods are determined for any given year, we may, by applying these rates to the estimated population of this year, construct a table of survivorship showing the number surviving at certain periods thereafter among those born in the given year.

Thus, of 10,000 persons born in Maryland during 1912, we have to determine the number surviving at the end of five years, of ten years, etc., providing the death rate of 1912 remains constant. A chart constructed from this table will indicate the sanitary condition of the State during the year 1911, and, described in the manner presently to be mentioned, forms the "Maryland Biometer."

The Maryland biometer is shown in the chart in quinquennial periods for the year 1912, assuming the death rate of that year to remain constant. Instead of considering the whole population as a basis the scale is reduced to a population of 10,000 for the convenience of comparison with succeeding years. Thus, of a population of 10,000 born in Maryland during 1912, how many will be living and how many dead at the end of 5 years, of 10 years, etc.? This table and chart indicate survivorship and give both the number of living and dead at each quinquennial period after 1912.

Such charts readily admit of comparison with preceding or following years, as variations in the mortality at the various ages appear in the curve in their proper positions, and do not (as in the expectancy tables) merely modify the form of the curve.

The only factors necessary in the construction of this curve are the mortality rates for the several age periods (0-5, 5-10, etc.), which may be applied first to the original population of 10,000, then to the remaining population, after deducting the deaths from 0-5, etc. Applying the death rates obtained from Table XIII to 10,000 persons born in 1912, the survivorship at succeeding quinquennial periods is shown in Table XXVII-A. In Table XXVII-B the survivorship with regard to color is shown.

TABLE XXVII—A.

SURVIVORSHIP IN MARYLAND, 1912—TOTAL POPULATION.

Survivors of 10,000 Persons Born in Maryland in 1912 at Succeeding Quinquennial Periods, Assuming the Death Rate of that Year to be Constant.

Number born in 1912.....	10,000
Number reaching age of 5 years (A. D. 1917).....	8,065
Number reaching age of 10 years (A. D. 1922).....	7,954
Number reaching age of 15 years (A. D. 1927).....	7,872
Number reaching age of 20 years (A. D. 1932).....	7,704
Number reaching age of 25 years (A. D. 1937).....	7,476
Number reaching age of 30 years (A. D. 1942).....	7,194
Number reaching age of 35 years (A. D. 1947).....	6,889
Number reaching age of 40 years (A. D. 1952).....	6,563
Number reaching age of 45 years (A. D. 1957).....	6,191
Number reaching age of 50 years (A. D. 1962).....	5,769
Number reaching age of 55 years (A. D. 1967).....	5,226
Number reaching age of 60 years (A. D. 1972).....	4,594
Number reaching age of 65 years (A. D. 1977).....	3,767
Number reaching age of 70 years (A. D. 1982).....	2,805
Number reaching age of 75 years (A. D. 1987).....	1,730
Number reaching age of 80 years (A. D. 1992).....	774

TABLE XXVII—B.

COMPARATIVE TABLE OF SUBVIVORSHIP IN MARYLAND, 1912—WHITE AND COLORED.

Number of Survivors of 10,000 Persons Born in Maryland in 1912 at Succeeding Quinquennial Periods, Assuming the Death Rate of that Year to Remain Constant.

	White.	Colored.
Number born in 1912.....	10,000	10,000
Number reaching age of 5 years (A. D. 1917)....	8,314	6,972
Number reaching age of 10 years (A. D. 1922)....	8,222	6,806
Number reaching age of 15 years (A. D. 1927)....	8,163	6,642
Number reaching age of 20 years (A. D. 1932)....	8,033	6,338
Number reaching age of 25 years (A. D. 1937)....	7,852	5,959
Number reaching age of 30 years (A. D. 1942)....	7,624	5,511
Number reaching age of 35 years (A. D. 1947)....	7,360	5,067
Number reaching age of 40 years (A. D. 1952)....	7,081	4,605
Number reaching age of 45 years (A. D. 1957)....	6,763	4,080
Number reaching age of 50 years (A. D. 1962)....	6,370	3,596
Number reaching age of 55 years (A. D. 1967)....	5,861	2,984
Number reaching age of 60 years (A. D. 1972)....	5,212	2,440
Number reaching age of 65 years (A. D. 1977)....	4,333	1,936
Number reaching age of 70 years (A. D. 1982)....	3,259	1,358
Number reaching age of 75 years (A. D. 1987)....	2,028	797
Number reaching age of 80 years (A. D. 1992)....	923	313

This biometer is graphically shown in Chart No. 25. It is evident that such a chart will indicate the life condition of the State, both in its form and in its area. To calculate the area it is only necessary to measure the length of the perpendiculars to the base line from each component point of the curve, and take the same measurement for the next succeeding point. The area of each trapezoid thus produced may be calculated in the usual manner, by taking the product of one-half the sum of its parallel sides by its altitude. The altitude in this case may be assumed for purposes of comparison to be unity. It is evident that the most favorable curve will be that with the highest and most nearly horizontal crest.

A new biometer is introduced in this report (Chart 26) for the purpose of comparing the differences between the white and colored deaths at the different age periods. Note the decided preponderance of colored deaths, especially in early and middle life.

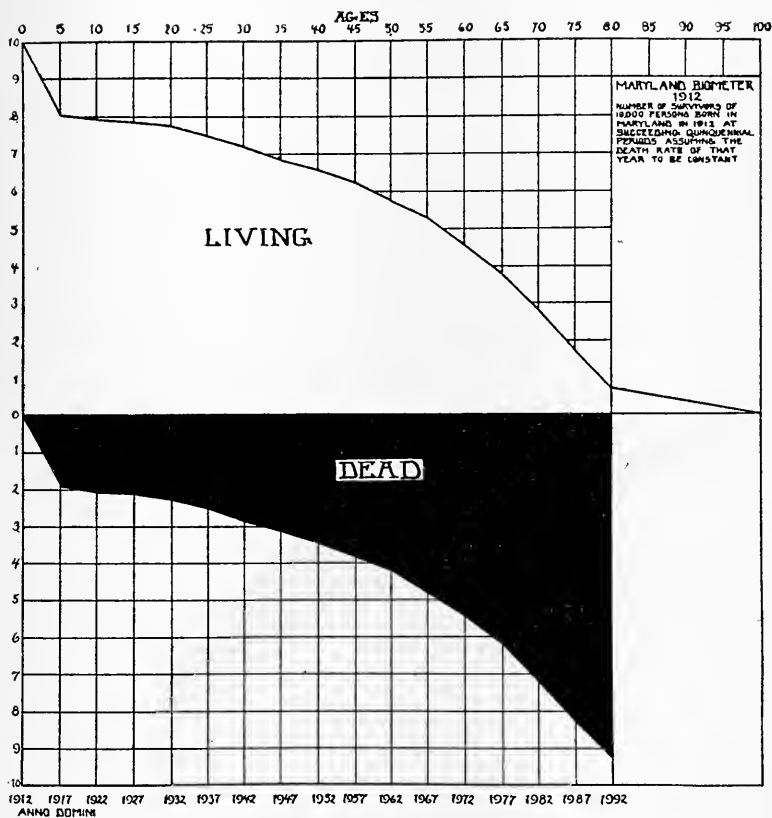


CHART 25.

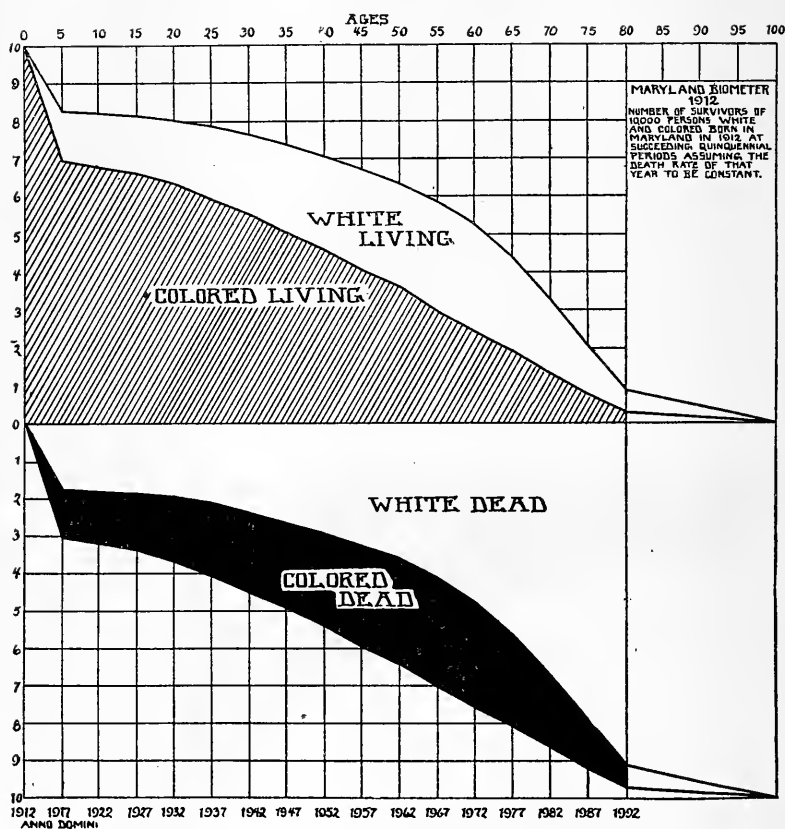


CHART 26—*Illustrating the higher death rate in the colored population. In the upper biometer the total white living comprises the area marked colored living, plus the area marked white living. In the lower biometer the colored dead comprises the area marked white dead, plus the area marked colored dead.*

TABLE XXVIII—A.

ESTIMATED POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS FOR THE YEAR 1912—MARYLAND'S ESTIMATED POPULATION, 1,316,806.

<i>Ages.</i>	<i>Per Cent.</i>	<i>Estimated Population.</i>	<i>Deaths.</i>	<i>Mortality Per 1,000 Annually.</i>	<i>Mortality Per 1,000 for Age Periods.</i>
Under 5 Years.....	10.63	139,976	5,415	38.69	193.45
5 to 10.....	10.32	135,894	373	2.74	13.70
10 to 15.....	10.01	131,812	272	2.06	10.30
15 to 20.....	9.88	130,100	556	4.27	21.35
20 to 25.....	9.51	125,228	742	5.93	29.65
25 to 30.....	8.49	111,797	843	7.54	37.70
30 to 35.....	7.39	97,312	826	8.49	42.45
35 to 40.....	7.11	93,625	885	9.45	47.25
40 to 45.....	6.06	79,798	904	11.33	56.65
45 to 50.....	5.23	68,869	940	13.65	68.25
50 to 55.....	4.55	59,915	1,127	18.81	94.05
55 to 60.....	3.32	43,718	1,056	24.15	120.75
60 to 65.....	2.69	35,422	1,276	36.02	180.10
65 to 70.....	2.05	26,995	1,377	51.01	255.05
70 to 75.....	1.36	17,909	1,370	76.50	382.50
75 to 80.....	0.76	10,008	1,106	110.51	552.55
80 to 85.....	0.53	6,976	1,458	209.00	
85 to 90.....					
90 to 100.....					
100 and over.....					
Unknown.....	0.11	1,448	71	49.03	

TABLE XXVIII—B.

ESTIMATED WHITE POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS FOR THE YEAR 1912—MARYLAND'S ESTIMATED WHITE POPULATION, 1,084,682.

<i>Ages.</i>	<i>Per Cent.</i>	<i>Estimated White Population.</i>	<i>Deaths.</i>	<i>Mortality Per 1,000 Annually.</i>	<i>Mortality Per 1,000 for Age Periods.</i>
Under 5 Years.....	10.51	114,048	3,845	33.71	168.55
5 to 10.....	10.16	110,151	244	2.22	11.10
10 to 15.....	9.89	107,276	154	1.44	7.20
15 to 20.....	9.84	106,725	342	3.20	16.00
20 to 25.....	9.37	101,667	460	4.52	22.60
25 to 30.....	8.37	90,790	527	5.80	29.00
30 to 35.....	7.44	80,738	559	6.92	34.60
35 to 40.....	7.10	77,005	583	7.57	37.85
40 to 45.....	6.11	66,265	596	8.99	44.95
45 to 50.....	5.29	57,402	668	11.64	58.20
50 to 55.....	4.66	50,514	807	15.98	79.90
55 to 60.....	3.47	37,613	833	22.15	110.75
60 to 65.....	2.80	30,269	1,021	33.73	168.65
65 to 70.....	2.14	23,235	1,153	49.62	248.10
70 to 75.....	1.42	15,402	1,163	75.51	377.50
75 to 80.....	0.81	8,801	958	108.85	544.25
80 to 85.....	0.54	5,908	1,263	213.78	
85 to 90.....					
90 to 100.....					
100 and over.....					
Unknown.....	0.09	937	32	34.15	

TABLE XXVIII—C.

ESTIMATED COLORED POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS
FOR THE YEAR 1912—MARYLAND'S ESTIMATED COLORED POPULATION, 232,124.

<i>Ages.</i>	<i>Per Cent.</i>	<i>Estimated Colored Population.</i>	<i>Deaths.</i>	<i>Mortality Per 1,000 Annually.</i>	<i>Mortality Per 1,000 for Age Periods.</i>
Under 5 years.....	11.17	25,928	1,570	60.55	302.75
5 to 10.....	11.09	25,743	129	5.01	25.05
10 to 15.....	10.57	24,536	118	4.81	24.05
15 to 20.....	10.07	23,375	214	9.16	45.80
20 to 25.....	10.15	23,561	282	11.97	59.85
25 to 30.....	9.05	21,007	316	15.04	75.20
30 to 35.....	7.14	16,574	267	16.11	80.55
35 to 40.....	7.16	16,620	302	18.17	90.85
40 to 45.....	5.83	13,533	308	22.76	113.80
45 to 50.....	4.94	11,467	272	23.72	118.60
50 to 55.....	4.05	9,401	320	34.04	170.20
55 to 60.....	2.63	6,105	223	36.53	182.65
60 to 65.....	2.22	5,153	255	49.49	247.45
65 to 70.....	1.62	3,760	224	59.57	297.85
70 to 75.....	1.08	2,507	207	82.56	412.80
75 to 80.....	0.52	1,207	148	122.62	613.10
80 to 85.....	0.46	1,068	195	182.58	
85 to 90.....					
90 to 100.....					
100 and over.....					
Unknown.....	0.22	511	39	76.32	

TABLE XXIX—A.

ESTIMATED POPULATION OF MARYLAND.

<i>Years.</i>	<i>Per Cent.</i>	1907	1908	1909	1910	1911	1912
0 to 5.....	10.63	147,311	149,264	151,127	146,763	139,021	139,976
5 to 10.....	10.32	145,366	147,285	149,186	148,820	134,840	135,894
10 to 15.....	10.01	138,234	140,611	142,462	138,184	130,790	131,812
15 to 20.....	9.88	131,361	133,620	135,379	131,218	129,091	130,100
20 to 25.....	9.51	117,486	119,506	121,079	117,358	124,228	125,228
25 to 30.....	8.49	111,271	113,175	114,664	110,752	110,930	111,797
30 to 35.....	7.39	92,977	94,576	95,821	92,876	97,450	97,312
35 to 40.....	7.11	86,623	88,113	89,273	86,529	92,899	93,625
40 to 45.....	6.03	75,212	75,505	77,512	75,130	79,050	79,798
45 to 50.....	5.23	61,336	62,391	63,212	61,269	68,241	68,869
50 to 55.....	4.55	52,778	53,758	54,392	52,720	59,450	59,915
55 to 60.....	3.32	40,070	40,758	41,294	40,021	43,510	43,718
60 to 65.....	2.69	33,327	33,899	34,345	33,290	35,147	35,422
65 to 70.....	2.05	23,342	23,743	24,056	23,316	26,654	26,995
70 to 75.....	1.36	15,950	16,224	16,458	15,933	18,584	17,909
75 to 80.....	0.76	10,244	10,420	10,557	10,233	9,931	10,008
80 and over.....	0.53	6,270	6,373	6,455	6,293	6,925	6,976

TABLE XXIX—B.

DEATHS BY AGES.

<i>Years.</i>	1907	1908	1909	1910	1911	1912
0 to 5.....	6,541	5,802	5,998	5,848	5,593	5,415
5 to 10.....	422	486	442	433	426	373
10 to 15.....	330	336	326	387	320	272
15 to 20.....	618	628	552	604	574	556
20 to 25.....	1,793	1,679	1,680	1,684	763	742
25 to 30.....	1,749	1,613	1,597	1,723	850	843
30 to 35.....					774	826
35 to 40.....	1,772	1,714	1,710	1,764	859	885
40 to 45.....					843	904
45 to 50.....	1,904	1,983	1,928	2,119	921	940
50 to 55.....					1,077	1,127
55 to 60.....	2,485	2,437	2,357	2,639	1,017	1,056
60 to 65.....					1,215	1,276
65 to 70.....	2,287	2,272	2,232	2,480	1,285	1,377
70 to 75.....					1,325	1,370
75 to 80.....	1,349	1,276	1,314	1,359	1,106	1,106
80 years and over.....					1,114	1,458

TABLE XXIX—C.

DEATH RATE PER THOUSAND AT KNOWN AGES.

<i>Years.</i>	1907	1908	1909	1910	1911	1912
0 to 5.....	44.40	38.87	39.68	39.25	40.03	38.69
5 to 10.....	3.04	3.23	2.96	3.04	3.15	2.74
10 to 15.....	2.39	2.38	2.28	2.65	2.44	2.06
15 to 20.....	4.70	4.69	4.07	4.60	4.13	4.27
20 to 25.....	7.83	7.21	7.12	7.26	6.14	5.93
25 to 30.....	9.73	8.28	8.62	9.62	7.66	7.54
30 to 35.....					7.94	8.49
35 to 40.....					9.24	9.45
40 to 45.....	12.99	12.34	12.15	13.11	10.66	11.33
45 to 50.....	20.51	20.99	20.14	22.37	13.49	13.65
50 to 55.....					18.11	18.81
55 to 60.....					23.12	24.15
60 to 65.....	43.85	42.45	40.53	48.31	34.71	36.02
65 to 70.....	87.31	91.46	82.60	96.92	48.21	51.01
70 to 75.....					71.29	76.50
75 to 80.....					111.36	110.51
80 years and over.....	215.15	210.21	203.40	219.19	204.18	209.00

TABLE XXX.

SURVIVORSHIP BY AGES—1907, 1908, 1909, 1910, 1911, 1912.

10,000 Born in.....	1907	1908	1909	1910	1911	1912
Number reaching 5 years.....	7,780	8,056	8,019	8,038	7,998	8,065
Number reaching 10 years.....	7,662	7,926	7,901	7,916	7,872	7,954
Number reaching 15 years.....	7,570	7,832	7,811	7,811	7,776	7,872
Number reaching 20 years.....	7,392	7,646	7,652	7,631	7,615	7,704
Number reaching 25 years.. }	6,813	7,095	7,107	7,368	7,381	7,476
Number reaching 30 years.. }	6,150	6,408	6,495	7,086	7,098	7,194
Number reaching 35 years.. }				6,765	6,816	6,889
Number reaching 40 years.. }				6,420	6,501	6,563
Number reaching 45 years.. }	5,351	5,619	5,726	6,056	6,154	6,191
Number reaching 50 years.. }	4,254	4,440	4,578	5,969	5,793	5,769
Number reaching 55 years.. }				5,431	5,214	5,226
Number reaching 60 years.. }				4,706	4,611	4,594
Number reaching 65 years.. }	2,389	2,556	2,754	3,641	3,812	3,767
Number reaching 70 years.. }	313	218	524	2,571	2,891	2,805
Number reaching 75 years.. }				1,478	1,861	1,730
Number reaching 80 years.. }				686	825	774

REPORTS OF County and Town Boards of Health.

Reports of County Health Officers.

ALLEGANY COUNTY.

Dr. J. C. Holdsworth, Midland, Health Officer. No report.

ANNE ARUNDEL COUNTY.

ANNAPOLIS, MD., March 1, 1913.

Dr. John S. Fulton,
Secretary State Board of Health,
Baltimore, Md.

Dear Dr. Fulton: I herewith submit my report for the year ending December 31, 1912.

Total number of deaths, 650; white males, 191; white females, 108; colored males, 188; colored females, 163.

Total number of births, 715; white males, 251; white females, 217; colored males, 117; colored females, 130.

The principal causes of death given: Disease of heart and arteries, 58; typhoid fever, 14; apoplexy, 26; cerebral hemorrhage, 15; acute cerebral paralysis, 7; convulsions, 18; concussion, 2; blood clot on brain, 1; pneumonia, broncho and lobar, 57; bronchitis, 12; influenza, 3; congestion of lung, 3; pulmonary hemorrhage, 1; asthma, 1; pulmonary abscess, 1; pulmonary tuberculosis, 50; tuberculosis of hip, 1; tuberculosis of throat, 1; tubercular peritonitis, 5; nephritis, acute and chronic, 64; still births, 32; premature births, 22; pertussis, 14; gastro enteritis, 19; gastritis, 1; dysentery, 2; enterocolitis, 20; chronic diarrhoea, 1; intestinal hemorrhage, 1; enteritis, 1; cholera infantum, 9; cancer of intestines, 4; ulcer of stomach, 1; obstruction, 1; strangulated hernia, 2; appendicitis, 1; cancer of stomach, 9; acute indigestion, 12; intestinal intoxication, 1; marasmus, 14; acute inanition, 2; congenital debility, 7; malnutrition, 1; general debility, 1; carcinoma of uterus, 6; carcinoma of breast, 3; cancer of liver,

4; cancer of lung, 1; sarcoma of humerus, 1; cancer of face, 1; cancer of neck, 1; cancer of testical, 1; cancer of leg, 1; hepatic abscess, 1; hepatic colic, 1; gall stones, 1; hepatitis, 1; cirrhosis of liver, 3; laryngitis, 1; diabetes, 2; cretanism, 1; sunstroke, 1; eclampsia, 1; accidental asphyxia, 2; natural causes, 2; infirmities of age, 10; accidents including suicides and murders, 34; congenital hydrocephalus, 1; congenital malformation, 1; epilepsy, 1; syphilis, 3; chronic alcoholism, 1; legal execution, 1; septicemia, 1; dementia, 1; cystitis, 3; nervous prostration, 1; unknown, 10; pernicious anemia, 1; cellulitis of face and neck, 1; malarial fever, 3; locomotor ataxia, 1; meningitis, 9; diphtheria, 5; icterus neonatorum, 1; polio myelitis, 3.

Contagious diseases reported—Typhoid fever, 48; of this number 17 occurred at the Maryland House of Correction; measles, 3; chicken pox, 7; pertussis, 24; diphtheria, 20; septis tonsillitis, 1; ophthalmia neonatorum, 1; scarlet fever, 26; polio myelitis, 6.

In July Wm. M. Talbott, an undertaker in the First District, was reported to the Secretary of the State Board of Health for illegal interment of a body. He was notified to appear before the Secretary, and what further action was taken I do not know.

On July 3, 1912, I swore out a warrant before Justice of the Peace John N. Davis, of Annapolis, against John E. Dolle, employed by the firm of Henry W. Jenkins & Sons, of Baltimore, for disintering two bodies on July 1st, 1912, without obtaining permission of the county health officer or his representative. The man was convicted before Justice Davis and an appeal taken to the Circuit Court, where the case was steted by the State's attorney, because of insufficient evidence to convict. In this same case Chaney and Suit, Undertakers, of Annapolis, were involved and a warrant was sworn out against them by the direction of Dr. Price, but to date the case has not come to trial. I have no doubt that when the case is called that a conviction will be secured.

November 29, 1912, I received a telephone message from Dr. Rohrer notifying me that a man working in a guano factory at Curtis Bay, Fifth District, but living in Baltimore, had been taken to the Quarantine Hospital, Baltimore, suffering with smallpox. With the assistance of Dr. T. B. Horton, local health officer at Curtis Bay, on November 30 and December 2, we vaccinated 180 persons who had come in contact with this man, and to date we have had no smallpox in the county.

Several times during the year I have been forced to close one or more schools on account of scarlet fever and diphtheria.

I have registered 27 midwives, 24 being negro women and 3 white. There are many more in the county that I do not know of and who do not report births. If the physicians living in the county who know these midwives would report them to me with the evidence, I think that after prosecuting a few they would all register and make the report of a birth promptly. As conditions now are, it is almost impossible to secure a conviction in the cases against the midwives.

Respectfully yours,

WALTER H. HOPKINS,

County Health Officer.

BALTIMORE COUNTY.

TOWSON, MD., June 6, 1913.

Dr. John S. Fulton,

Secretary State Board of Health,

6 E. Franklin St., Baltimore, Md.

Dear Dr. Fulton: In accordance with the law which requires that I shall make an annual report to the Honorable State Board of Health, I herewith transmit same for Baltimore County for the year ending December 31, 1912.

I have compiled in the annual report the tabulated monthly statements that you may at a glance get the condition of the county for the entire year.

During the year for which this report is compiled the health of Baltimore County has been good, barring those diseases controlled by climatic causes. The district health officers have preserved in each district a condition which is a credit to the whole county, thus showing that they are looking after the health of the residents of their respective districts in such a manner that epidemics and contagious diseases have been arrested in their incipency, causing great saving of life to the public, it being only necessary in a few instances to call to their aid the county health officer, and in some instances the State Board of Health to stamp out any infectious or pestilential disease which had grown to proportions beyond the ability of the district health officer to extinguish, and in those instances the assistance of the State Board has been greatly appreciated.

During the period covered by this report the following comparisons and items are given, in order that at a glance you may the better understand the conditions as they existed in comparison with other years.

VITAL STATISTICS.

During 1912 there were 2,032 births reported, this being an increase of 508 over the year 1911, as compared with an increase of 67 in 1911. The figures also show an increase of 708 over the 1909. This is all due to the present law for reporting vital statistics; yet I feel that there are a great many births that are not reported.

There were 1,857 deaths, as compared with 1,932 in 1911. The greatest number of deaths were from one cause, 217 from tuberculosis, 7 less than in 1911. The three next greatest number of deaths from any one cause were as follows: Bright's disease, 167; heart disease, 145; pneumonia, 147.

There were 1,857 burial permits issued. No prosecutions nor convictions for any cause has come to the notice of this office.

REGISTRATION AND LICENSURE OF MIDWIVES.

The number of midwives registered were 6; the usual qualification being given as having practices with physicians for a number of years, or having practiced as midwives for a number of years. There was one case where an examination was taken for the practice of midwifery and the applicant made a creditable showing in answering the questions.

INFECTIOUS DISEASES.

The number of cases of infectious diseases reported by the health officer to this office were 858, as compared with 2,094 in 1911, 1,346 in 1910 and 1,297 in 1909. There were 129 deaths caused by infectious diseases, as compared with 188 deaths in 1911 and 191 in 1910, showing that physicians are using every measure known to prevent the spread of infectious diseases, and every known measure to combat the disease when once it is known to exist. There were several epidemics during the year, notably the epidemic of scarlet fever at Roland Park, and the typhoid epidemic at Towson. The number of fumigations and disinfections were 739 rooms and 404 houses. There were 33 cases of diphtheria in which antitoxin was issued.

TUBERCULOSIS.

Number of rooms disinfected were possibly 175, yet I have no definite report from each district health officer. Deaths from tuberculosis were 217, as compared with 224 in 1911 and 226 in 1910. A great number of these deaths occur in hospitals in Baltimore County, having been brought out from the City of Baltimore and elsewhere.

VACCINATIONS.

The district health officer acts as a vaccine physician, visiting the schools and vaccinating the pupils when requested by the principal of the school or at such times as he thinks advisable. A great many children are vaccinated by their family physician, and permit shown before they are permitted to enter.

NUISANCES.

There were 373 nuisance complaints reported as having been made to the district health officer, all of which were investigated, and as reported, 294 abated. There are a great many nuisances which are abated by the district health officer without the aid of this office, only when it becomes impossible for the district health officer to get results, then the assistance of the county health officer is invoked, and it is very often necessary to make a personal inspection before the trouble can be remedied. There are, however, a great many nuisances in Baltimore County which it is next to impossible to have abated, without the aid of sewerage system, especially in the districts directly bordering on Baltimore City, which are building up very rapidly.

WATER AND MILK ANALYSIS.

The number of samples taken of milk and water were 66. These having been reported by the district health officer.

GENERAL ADMINISTRATIVE.

The number of meetings of the sanitary officers for Baltimore County during the year are 12, one each month, at which time are discussed ways and means for the handling of sanitary problems in the county. The county health officer maintains a clerk at Towson and makes one regular trip each week to his office, and as many more special trips as the duties of the office require.

I have only been an incumbent in this office since May 1, 1912, but as the records are kept by the clerk, and as it is possible to give a full report for the whole year, I have made this report out to cover the time also, while Dr. Gorsuch was county health officer.

Very respectfully,

HARRY M. SLÁDE,

County Health Officer.

COMPARATIVE STATISTICAL STATEMENT FOR YEAR ENDING
DECEMBER 31, 1912.

INFECTIOUS DISEASES.

	1909.	1910.	1911.	1912.
Typhoid Fever.....	239	329	192	262
Scarlet Fever.....	84	257	235	157
Measles.....	612	331	861	110
Whooping Cough.....	96	166	156	55
Diphtheria.....	112	117	82	181
Chickenpox.....	83	36	108	60
Mumps.....	4	109	446	16
Influenza.....	...	...	3	2
Erysipelas.....	5	...	3	3
Meningitis.....	7	1	2	4
Impetigo Contagioso.....	54	...	...	...
Smallpox.....	1	...	2	1
Infantile Paralysis.....	...	...	...	7
Miscellaneous.....	...	...	4	...
Total.....	1297	1346	2094	858

DEATHS.

	1909.	1910.	1911.	1912.
Male.....	916	1055	1026	975
Female.....	804	869	906	882
White American born.....	1262	1404	1414	1332
White Foreign born.....	224	267	281	284
Colored.....	234	254	237	241
Total.....	1720	1924	1932	1857

BIRTHS.

	1909.	1910.	1911.	1912.
Male.....	715	779	826	1052
Female.....	609	678	698	980
White.....	1185	1327	1369	1833
Colored.....	139	130	155	199
Total.....	1324	1457	1524	2032

MISCELLANEOUS.

	1909.	1910.	1911.	1912.
Houses disinfected.....	155	265	499	404
Rooms disinfected.....	359	568	703	739
Water and Milk Analyzed.....	45	105	31	66
Nuisance complaints.....	267	231	294	373
Nuisances abated.....	222	175	167	264

CAUSES OF DEATH.

	1909.	1910.	1911.	1912.
Tuberculosis.....	202	226	224	217
Typhoid Fever.....	38	46	40	22
Scarlet Fever.....	3	2	7	1
Measles.....	6	3	14	...
Whooping Cough.....	18	29	9	13
Diphtheria.....	12	16	19	22
La Grippe.....	22	30	30	18
Septicemia.....	8	12	18	15
Erysipelas.....	6	3	4	3
Meningitis.....	43	42	45	32
Malarial Fever.....	...	...	1	...
Pellagra.....	...	...	1	...
Tetanus.....	3	8	...	3
Cancer.....	62	75	86	98
Rheumatism.....	7	10	8	12
Diabetes.....	10	15	16	14
Cerebral Hemorrhage.....	37	30	55	55
Paralysis.....	57	70	61	46
Heart Disease.....	133	145	176	145
Bronchitis.....	24	37	36	25
Pneumonia—Broncho.....	16	35	65	49
Pneumonia—Lobar.....	161	143	108	98
Pleurisy.....	...	...	...	1
Hemorrhage.....	12	8	4	3
Pulmonary Congestion.....	12	12	19	32
Intestinal—Adults.....	21	21	27	30
Gastritis.....	8	5	9	11
Appendicitis.....	5	1	1	2
Peritonitis.....	9	9	7	10
Acute Indigestion.....	21	18	22	17
Cirrhosis of Liver.....	13	12	19	16
Bright's Disease.....	136	159	160	167
Apoplexy.....	36	28	29	37
Alcoholism.....	8	7	11	7
Old Age.....	70	89	72	71
Cardiac Syncope.....	11	18	10	...
Epilepsy.....	4	8	8	13
Pregnancy.....	21	18	10	6
Asthma.....	2	...	3	4
Dropsy.....	...	2	3	4
Anemia.....	6	3	3	7
Arterio Sclerosis.....	...	...	...	48
Mania.....	4	9	12	7
Enteric Fever.....	...	...	...	1
Catarrhal Laryngitis.....	...	...	...	2
<i>Infants—</i>				
Debility.....	33	70	49	48
Intestinal.....	106	108	88	73
Convulsions.....	23	25	20	14
Cholera Infantum.....	31	36	15	20
Marasmus.....	42	46	30	31
Miscellaneous.....	...	6	5	14
Still Births.....	45	78	84	85
Premature Births.....	48	44	62	61
Accidents.....	74	51	55	59
Accidents (Drowning).....	...	13	22	24
Murder.....	9	2	4	5
Suicide.....	21	15	14	16
Miscellaneous.....	41	38	33	23
Total.....	1720	1924	1932	1857

STATISTICAL STATEMENT FOR YEAR ENDING DECEMBER 31st, 1912.

INFECTIOUS DISEASES.

	<i>Total.</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Typhoid Fever.....	262	39	7	12	3	7	7	13	56	43	51	17	7
Scarlet Fever.....	157	53	19	11	3	6	9	2	3	15	12	12	12
Measles	110	4	..	18	11	6	25	9	23	..	2	3	9
Diphtheria.....	181	29	8	8	5	..	3	10	7	9	39	35	28
Whooping Cough.....	55	4	4	9	11	6	7	..	..	1	5	2	6
Chickenpox.....	60	19	14	11	3	1	2	..	..	1	..	2	7
Mumps.....	16	2	..	7	3	1	1	..	..	..	1	..	1
Erysipelas.....	3	2	..	..	1	..	..	..	..	..	..	..	..
Meningitis.....	4	..	..	2	1	..	..	..	1	..	..	..	..
Influenza.....	2	1	..	..	..	..	..	..	..	..	..	..	1
Smallpox.....	1	1	..	..	..	..	..	..	..	..	..	..	..
Infantile Paralysis.....	7	..	..	..	..	1	..	1	1	1	..	..	3
Total.....	858	154	52	78	41	28	54	35	91	70	110	71	74

DEATHS.

	<i>Total.</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Male.....	975	90	95	95	76	55	60	105	87	89	62	62	99
Female.....	882	89	71	79	67	57	71	83	85	74	72	61	73
White American born..	1332	127	117	122	109	81	98	148	118	114	96	82	120
White Foreign born....	284	30	33	24	17	19	19	19	24	22	24	22	31
Colored.....	241	22	16	28	17	12	14	21	30	27	14	19	21
Total.....	1857	179	166	174	143	112	131	188	172	163	134	123	172

BIRTHS.

	<i>Total.</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Male.....	1052	83	73	93	65	49	91	136	89	100	90	81	102
Female.....	980	77	64	86	57	63	93	86	73	97	103	91	90
White.....	1833	144	123	150	114	101	165	202	145	177	182	159	171
Colored.....	199	16	14	29	8	11	19	20	17	20	11	13	21
Total.....	2032	160	137	179	122	112	184	222	162	197	193	172	192

MISCELLANEOUS.

	<i>Total.</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Houses disinfected.....	404	32	75	57	38	12	8	10	20	22	25	51	54
Rooms disinfected.....	739	61	199	53	59	22	39	24	21	31	57	103	70
Milk & Water Analyzed.	66	1	1	1	..	3	8	7	22	5	7	8	3
Nuisance complaints...	373	5	16	30	42	34	49	49	34	29	22	24	39
Nuisances abated.....	264	4	10	18	36	21	30	25	20	14	27	29	30
Total.....	1846	103	301	159	175	92	134	115	117	101	138	215	196

CAUSES OF DEATH FOR YEAR ENDING DECEMBER 31st, 1912.

	<i>Total.</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Tuberculosis.....	217	19	27	20	20	15	17	18	18	14	15	14	20
Typhoid Fever.....	22	5	1	2	2	1	..	1	4	3	2	..	1
Scarlet Fever.....	1	..	..	..	1	..	..	..	..	..	..	..	..
Measles.....	..	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough.....	13	3	1	1	..	1	1	..	4	2	..	..	..
Diphtheria.....	22	1	3	3	..	..	..	1	2	2	2	5	3
La Grippe.....	18	2	4	2	1	3	1	..	..	..	1	..	4
Septicemia.....	15	2	2	3	..	..	2	..	2	2	2	..	..
Erysipelas.....	3	..	..	..	..	1	1	..	..	..	..	1	..
Meningitis.....	32	4	2	2	4	1	2	6	3	2	..	1	5
Tetanus.....	3	..	..	..	1	..	..	1	..	..	1	..	..
Cancer.....	98	10	8	4	7	7	8	14	13	7	7	6	7
Rheumatism.....	12	1	..	3	..	1	..	1	2	1	2	..	1
Diabetes.....	14	..	1	3	1	1	..	3	1	2	1	..	1
Cerebral Hemorrhage..	55	7	4	2	2	4	9	4	5	6	6	2	4
Paralysis.....	46	5	2	8	6	1	4	4	2	5	3	2	4
Heart Disease.....	145	10	10	15	17	12	9	14	10	8	13	15	12
Bronchitis.....	25	1	1	4	2	3	1	4	..	1	1	4	3
Pneumonia—Broncho...	49	10	7	8	2	2	3	1	2	2	7	4	1
Pneumonia—Lobar....	98	16	17	10	11	6	3	2	4	8	5	3	13
Pleurisy.....	1	..	1	..	..	..	..	..	..	..	..	..	..
Pulmonary Hemorrhage	3	2	..	..	1	..	..	..	..	..	..	..	..
Pulmonary Congestion..	32	4	9	7	1	1	1	1	..	2	1	..	5
Intestinal—Adults.....	30	2	1	..	1	1	4	6	2	4	4	1	4
Gastritis.....	11	..	1	3	1	1	1	..	..	..	1	1	2
Appendicitis.....	2	..	..	..	1	..	1	..	..	..	..	..	..
Peritonitis.....	10	2	..	1	..	1	..	2	..	1	2	..	1
Acute Indigestion.....	17	2	..	1	2	2	1	3	1	1	1	2	1
Cirrhosis of Liver.....	16	3	2	2	2	1	..	2	1	..	..	2	1
Bright's Disease.....	167	13	15	16	14	12	13	15	15	9	10	14	21
Apoplexy.....	37	5	6	3	..	..	2	3	..	6	5	4	3
Alcoholism.....	7	..	1	..	..	..	..	1	2	..	..	..	3
Old Age.....	71	8	7	7	8	1	6	6	8	3	1	8	8
Epilepsy.....	13	4	1	1	1	2	1	..	..	..	..	1	2
Pregnancy.....	6	..	..	3	2	..	..	..	..	1	..	..	..
Congenital Syphilis....	4	1	..	..	1	1	..	..	1	..	..	..	..
Dropsy.....	4	1	..	..	..	..	..	1	1	..	1	..	..
Anemia.....	7	1	..	1	1	..	1	1	1	..	1	..	..
Mania.....	7	2	1	..	..	..	..	..	1	1	1	..	1
Arterio Sclerosis.....	48	..	5	8	3	8	4	4	1	5	6	3	1
Asthma.....	4	..	1	..	1	..	..	..	..	..	1	..	1
Enteric Fever.....	1	..	..	..	..	..	..	..	1	..	..	..	..
Catarrhal Laryngitis...	2	..	..	..	..	..	..	..	..	1	..	1	..
<i>Infants—</i>													
Debility.....	48	..	2	3	8	4	3	2	12	8	2	1	3
Intestinal.....	73	1	..	2	..	..	5	17	23	17	5	3	..
Convulsions.....	14	1	2	1	2	1	1	..	3	1	..	..	2
Cholera Infantum....	20	..	..	..	..	..	..	14	1	4	1	..	..
Marasmus.....	31	2	..	..	1	2	1	6	3	7	3	2	4
Miscellaneous.....	14	1	1	..	1	1	1	..	2	1	3	2	1
Still Births.....	85	8	2	9	3	5	4	10	9	12	6	9	8
Premature Births....	61	6	7	5	2	1	8	9	6	3	2	4	8
Accidents.....	59	10	9	9	2	3	6	3	2	1	5	3	6
Accidents—Drowning...	24	..	..	1	1	3	5	3	3	5	1	..	2
Murder.....	5	..	..	..	1	..	..	..	..	3	..	1	..
Suicide.....	16	3	1	1	2	1	..	3	..	1	2	1	1
Miscellaneous and Unknown.....	19	1	1	..	3	1	1	2	1	1	1	3	4
Total.....	1857	179	166	174	143	112	131	188	172	163	134	123	172

CALVERT COUNTY.

BARSTOW, February 24, 1913.

Dr. John S. Fulton,
Secretary State Department of Health,
Baltimore, Md.

Dear Doctor: I beg to submit the following report for the year ending December 31st, 1912.

During the year I have received and recorded certificates of births and deaths as follows: Births, 280; deaths, 137.

The following list is the principal causes of death, some being omitted on account of being unable to classify them: Tuberculosis, 12; pneumonia, 13; Bright's disease, 6; pleurisy, 1, bronchitis, 4; valve disease of heart, 6; cerebral hemorrhage, 3; paralysis, 2; burns, 1; epilepsy, 1; senile debility, 11; peritonitis, 1; stomatitis, 1; pharyngitis, 1; myocarditis, 1; still born, 9; spinabifida, 2; accidental drowning, 3; influenza, 1; typhoid fever, 4; pyosalpinx, 1; cancer, 8; paresis, 2; gun shot wound, 1; thrush, 1; premature birth, 3; colitis, 4; opium poisoning, 1; caustic potash poisoning, 1; intestinal intoxication, 1; gastro intestinal catarrh, 3; malnutrition, 3; congestion of lungs, 1; marasmus, 3; acute indigestion, 1; chronic gastritis, 1; cholera infantum, 1; heat exhaustion, 2; convulsions, 1; accidental scalded, 1; infantile paralysis, 1; congenital syphilis, 1; unknown causes, 12.

II. *Registration and Licenture of Midwives*—Forty-eight midwives are registered, all were practicing prior to July 1, 1910. None has applied for examination since the recent midwife law was enacted.

III. *Infectious Diseases*—Number of cases reported, 72. The following is a condensed summary of these deaths, arranged in point of number: Typhoid fever, 39; tuberculosis, 12; mumps, 5; influenza, 2; measles, 1; varicella, 1. Total, 72.

IV. Number of houses fumigated, 12. Prophylactic supplies were issued in every case, and instruction given by attending physician how they should be used. Fortunately, patients with tuberculosis are usually prone to be very optimistic and willingly follow the course laid down. I am sure the present widespread crusade against the "Great White Plague" has proven of material benefit in the way of educating the public

in regard to the value of fresh air and sunshine, both as a preventative and curative agent, no one will question.

V. Vaccination has been generally enforced throughout the county. There are no children attending school who have not been vaccinated.

VI. The public schools are heated by wood and coal stoves. The ventilation system, I think, fairly good in all the schools. Individual cups are used in all the schools and public places.

VII. *Nuisance*—One stagnant pond was reported to the Board of Health, but no action was taken, from the fact it could not be drained without it being turned into a neighbor's ice pond.

VIII. *Public and Private Water Supplies*—Public and private water supplies are from wells; some few artesian wells. The usual source of pollution is from surface drainage, where wells are not properly fixed. People are getting very much more careful now than a few years ago. I am frequently consulted as to the best method of caring for wells. Only a few samples were sent away for analysis.

IX. *Milk*—The source of milk supply being locally produced, no samples were taken for analysis.

X. *Documents and Records*—Births and deaths are recorded in a large register and kept in secretary's office.

XI. *General Administrative*—The local Board of Health met twice during the year. The secretary can consult them twice a month if necessary, pertaining to sanitary conditions of the county. Approximate amount expended by local Board of Health for the year 1912 was \$500.00, which includes fumigation fees, vaccination fees, burial permits and secretary's fees. The secretary receives \$100.

I. N. KING.

Health Officer Calvert Co., Md.

CAROLINE COUNTY.

Dr. J. R. Downes, Preston, Health Officer. No report.

CARROLL COUNTY.

(DISTRICT No. 1.)

TANEYTOWN, MD., December 31, 1912.

*Dr. John S. Fulton,**Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: I beg to submit my annual report for the year ending December 31, 1912.

The health of the people in District No. 1 is good as to the present time. During the year since my last report there has been comparatively little sickness, except an epidemic of mumps. We have had during the winter a number of cases of septic sore throat which simulated diphtheria, was infectious, but no deaths resulted. No cases of typhoid fever were reported. Furnished tuberculosis supplies in one case. Used antitoxin in one case. Disinfected two houses on account of tuberculosis. Have on hand 1,000 units of antitoxin and three fumigators.

Respectfully submitted,

F. H. SEISS, M. D.,

Health Officer District No. 1,
Carroll County.

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(DISTRICT No. 2.)

UNIONTOWN, MD., December 31, 1912.

*Dr. John S. Fulton,**Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: I beg leave to submit my annual report for the year ending December 31, 1912.

During the year we have had no serious epidemics, though there was an outbreak of diphtheria in several homes of a malignant character which caused two deaths, this disease was prevented from further extension by a rigid quarantine.

A mild epidemic of the mumps and whooping-cough has prevailed in the district.

We have used of the antitoxin supplied by the board, one 3,000 and one 2,000 units.

Respectfully submitted,

LUTHER KEMP, M. D.,

Health Officer District No. 2,
Carroll County.

(DISTRICT No. 3.)

UNION MILLS, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I beg leave to submit my annual report for the year ending December 31, 1912.

The health and sanitary conditions of Myer's District at this time are all that could be desired.

During the past summer we have had a small epidemic of typhoid fever in the village of Union Mills, and after making a thorough investigation and examination of the used water supply it was traced to a spring which was infected by overflow of surface water. During the past winter we have had the first cases of diphtheria to make their appearance that we have for a period of four years, all, however, occurring endemically, making it rather hard to find the infection carrier. On December 17, Black's School was closed and fumigated for a period of seven days, as two cases were reported to have been attending school at the time the physician diagnosed the trouble. After closing the school and fumigating there were no new cases infected.

Respectfully submitted,
G. LEWIS WETZEL, M. D.,
Health Officer District No. 3.
Carroll County.

(DISTRICT No. 4.)

GAMBER, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I beg to submit my annual report for the year ending December 31, 1912.

There has been no contagious diseases in the Fourth District for the year 1912 to my knowledge. Have not had any houses to fumigate, none having been reported to me. Have had several horses buried and several sent to Fidells. In other respects District No. 4 is in good condition.

Respectfully submitted,
R. F. WELLS, M. D.,
Health Officer District No. 4.
Carroll County.

(DISTRICT No. 5.)

ELDERSBURG, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I beg leave to submit my annual report for the year ending December 31, 1912.

Freedom District has been exceptionally free from contagious diseases during the past year. I have had only three houses to fumigate and two complaints of nuisances to investigate. I have made the usual reports to State Board of Health and to Dr. Foutz.

Respectfully submitted,

M. D. NORRIS, M. D.,
Health Officer Fifth District,
Carroll County.

(DISTRICT No. 6.)

MANCHESTER, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I hereby beg to submit my annual report as health officer for the Sixth District of Carroll County for the past year, to December 31, 1912.

During this period I had occasion to report the following contagious and infectious diseases: Scarlet fever, 14; typhoid fever 3; diphtheria, 4; measles, 4; whooping cough, 4, and mumps, 3, all of which cases were promptly reported to the State Board of Health as required by law, and in all cases where scarlet fever, typhoid fever and diphtheria prevailed, the premises were quarantined and apartments fumigated.

All of the fumigating supplies that I had on hand during the past year have been used.

As requested by the State Board of Health, an effort was made to have the towns and villages of said district cleaned up and put in better sanitary condition, but so far I am sorry to say, not much progress has been made in this respect, which is due mainly to the indifference of the town authorities, although the citizens would be pleased to have sanitary regulations carried out more strictly, and hope that in the future more can be accomplished along this line.

Respectfully submitted,

J. F. B. WEAVER, M. D.,
Health Officer District No. 6,
Carroll County.

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(DISTRICT No. 7.)

WESTMINSTER, MD., December 31, 1912.

Dr. John S. Fulton,

*Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: I beg to submit the following report for the year ending December 31, 1912.

During this year we have not had any epidemics, except a remnant of the rather mild epidemic of scarlet fever which occurred during the fall of 1911. All of these cases of scarlet fever were carefully attended and proper quarantine rules instituted, hence, the comparatively few cases which resulted. In this instance there were no deaths.

I can say for Westminster District that we have entertained our usual good health. During the year there were reported the following cases of contagious and infectious diseases: 6 cases of diphtheria, 8 cases of typhoid fever, 8 cases of scarlet fever, 10 cases of whooping cough, 9 cases of mumps, 5 cases of measles, 7 cases of chicken pox, 3 cases of erysipelas, 8 cases of tuberculosis.

During the year we purchased six gross formaldehyde fumigators, and we have on hand of this number remaining 266. We purchased of diphtheria antitoxin, 14 packages, 3,000 units; 14 packages, 2,000 units; 14 packages, 1,000 units.

We have on hand besides that which the rest of the district health officers retain: 2 packages, 3,000 units; 2 packages, 2,000 units; 2 packages, 1,000 units.

I used three packages, 2-2,000 units and 1-3,000 units in a case of laryngeal diphtheria, Mary Slorp, indigent.

Dr. Henry M. Fitzhugh used 2-3,000 and 1-2,000 units at the Alms House.

There are two instances where the carcasses of dead animals were ordered to be buried. During the summer months the closet and hog pen nuisance was prevalent in Westminster and it was with difficulty that the bailiff and myself maintained a fair degree of sanitation along this line.

There were 572 births and 472 deaths reported in this year, all deaths were reported, but not every birth. I am glad to state that at the recent legislature a law was passed which will compel every physician to report all births attended by him.

Respectfully submitted,

CHAS. R. FOUTZ, M. D.,
Health Officer District No. 7,
Carroll County.

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(DISTRICT No. 8.)

HAMPSTEAD, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I beg leave to submit my annual report for the year ending December 31, 1912.

Judging from personal observation, the health conditions of Hampstead District during the past year have been fairly good. Several cases of scarlet fever, also some of tuberculosis, have come under my observation, all of which have been reported, and in all cases disinfection and fumigation have been done when necessary.

Owing to the fact that the medical practitioners of this district do not send in reports, I cannot give further details.

Respectfully submitted,

R. C. WELLS, M. D.,
Health Officer District No. 8.
Carroll County.

(DISTRICT No. 9.)

WINFIELD, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I herein submit my annual report ending December 31, 1912.

We have had no extensive epidemic during the year. I have directed sanitary precautions in ten families of typhoid fever, three of tuberculosis and one of cancer, cleaning and disinfecting each thoroughly afterwards. Have directed sanitary precautions in different localities, draining cess pools of stagnant water, inspecting pig pens and general surroundings, enforcing the burying of small animals and fowls which had carelessly been thrown out; have had the water examined in localities of suspected infection and can report a favorable condition of surroundings in district.

I had on hand at the beginning of this year sufficient tuberculosis supplies for the year. Six bottles of disinfectant, no diphtheriatic antitoxin and one fumigator.

Received from Dr. Charles Foutz, four bottles of disinfectant, three tubes of diphtheriatic antitoxin and twenty-two fumigators.

Distributed to Dr. Abe Cronk two bottles of disinfectant, and four fumigators. Used eight bottles of disinfectant and eighteen fumigators myself, leaving on hand three tubes of diphtheriatic antitoxin, one fumigator, no disinfectant and sufficient tuberculosis supplies.

Respectfully submitted,

E. D. CRONK, M. D.,
Health Officer Ninth District,
Carroll County.

(DISTRICT No. 10.)

MIDDLEBURG, MD., December 31, 1912.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Sir: I beg leave to submit my annual report for the year ending December 31, 1912.

During the year we have had in this district a considerable amount of sickness, general in character, excepting an epidemic of whooping cough which ran its course pretty generally through the district and adjacent parts of Frederick County. No deaths.

During the months of January, February and March, we had an extensive epidemic of follicular tonsilitis, many of the cases resembling very closely the epidemic of septic sore throat in Baltimore during the past year. No deaths.

Typhoid fever prevailed to a very moderate extent. No deaths.

Diphtheria, 4 cases in Myers family, Middleburg. These cases were in the practice of Dr. Legg, Union Bridge, who informs me that he reported the same to Dr. Watt, Union Bridge.

It came to my notice through complaints of residents at Keymar that the closets and cesspools at the Western Maryland Railway Station were in an unsanitary condition. Upon investigation, I found that the same have not been cleaned for some years. In communicating with the railway authorities they have neither promised nor done anything except to send some lime to the station.

Other minor nuisances have been kept well under subjection due to the fact that the public has become educated to the fact that the law will compel them to abate all nuisances and they, in public spirit, for the preservation of their own and their neighbor's health, have complied fully with the law.

Disinfectants on hand, none; diphtheria antitoxin, 1-1,000 units, 1-2,000 units, 1-3,000 units.

Respectfully submitted,

C. H. DILLER, M. D.,
Health Officer District No. 10,
Carroll County.

(DISTRICT No. 11.)

NEW WINDSOR, MD., December 31, 1912.

*Dr. John S. Fulton,**Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: I beg leave to submit my annual report for the year ending December 31, 1912.

Since last report I have diagnosed two cases of pulmonary phthisis and one case of tuberculosis of larynx. One patient was sent to Saranac, N. Y., the others are under observation complying with the requirements of the State Board of Health. During the year there have been no epidemics.

In and near the town of New Windsor there have been three deaths from sore throat, one was certainly diphtheria, the others were not reported to me, but were probably of the same nature. All houses in which they occurred have been fumigated.

The sanitary condition of New Windsor is good and suggestions have been made to town officers to co-operate in the suppression of the fly by screening breeding places of this dangerous and troublesome pest.

Respectfully submitted,

GEO. H. BROWN, M. D.,

Health Officer District No. 11,

Carroll County.

(DISTRICT No. 12.)

UNION BRIDGE, MD., December 31, 1912.

*Dr. John S. Fulton,**Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: I beg leave to submit this as my annual report for the year ending December 31, 1912.

The following diseases have prevailed in the district during the year: Whooping cough, measles, mumps, chickenpox, diphtheria, tonsilitis and typhoid fever. Tonsilitis overspreading all other diseases, the prevalence of which has far exceeded that of any other year during my practice in the district. Deaths reported from aforesaid diseases: Diphtheria, two. The sanitary condition of the entire district is good. There have been no complaints except from the citizens of Union

Bridge, who claim that the dust from the cement plant is not only damaging to their property, but also to their health. An appeal was made to the State Board of Health by a committee appointed by the Town Council of Union Bridge. The report of the committee is now being acted upon by the State Board.

The last examination of water showed color bacilla. Drs. Foutz and Arnold in tracing the pollution placed coloring matter in cesspools and wells supposed to communicate with the wells supplying the town. The results were negative.

Have issued two original packages tuberculosis supplies, used eight cans of pyroformal, for which I received two dollars and fifty cents. Have sent daily report of all cases of infectious and contagious diseases to Secretary of State Board.

Respectfully submitted,

JAMES WATT, M. D.,

Health Officer District No. 12,
Carroll County.

(DISTRICT No. 14.)

SYKESVILLE, MD., December 31, 1912.

Dr. John S. Fulton,

*Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: I beg to submit my annual report as health officer for Berrett District for the year ending December 31, 1912.

1. Making a special visit to public schools at Gaither's October 11, 1912, directing certain sanitary regulations.

2. Of again visiting February 13, 1912, the schools at Gaither's, prescribing for certain pupils afflicted with capitis pendiculosis—a scalp trouble.

3. Reporting March 12, 1912, seven cases of Chickenpox among the pupils at Public School at Hoods Mill.

4. Tracing up record of several incorrectly reported tuberculosis death records for State Board of Health.

5. Reporting one case pellagra in five-year colored child, Edna Tyler; diagnosed confirmed at the Maryland University Hospital.

Respectfully submitted,

DANIEL B. SPRECHER, M. D.,

Health Officer Fourteenth District,
Carroll County.

CECIL COUNTY.

Dr. T. J. Conrey, Chesapeake City, Health Officer. No report.

CHARLES COUNTY.

BEL ALTON, February 9, 1913.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Doctor Fulton: Upon being appointed Health Officer in July, I found the county absolutely unprotected against smallpox, about two per cent. of children vaccinated. I ordered a general vaccination. It was an awful task, as everything and everybody were against it, but it was done. Schools of from 40 to 77 children, not more than 2 or 3 and some none. All that were, were from Washington who moved in county. I do not think that there is anything in Potomac oysters and typhoid, as upon inquiry, I find they have been eaten as usual, and no cases in their neighborhood; all the typhoid cases inland and had no connection with Potomac oysters. There were about 24 deaths from tuberculosis, one removed (Ettie Armiger) from home; James P. Ryon (at Waldorf), which was disinfected, and one doubtful (fumigated). The tuberculosis was 98 per cent negroes and 95 per cent of these came into county for their living, having been employed in cities in Maryland, Pennsylvania and Washington. The balance of the number were due to contact.

REPORT FROM JULY 1, 1912, TO JANUARY 1, 1913.

Pulmonary tuberculosis, 6; measles, 7; typhoid fever, 28; mumps, 6; membranous croup, 1; diphtheria, 1; whooping cough, 9; scarlet fever, 5; chickenpox, 3.

Number of midwives registered, 4.

Deaths registered, 143; births registered, 289.

There were from what I can learn a great many cases of whooping cough which were not reported, also mumps and measles. I tried to get what I could, but in most cases no physician attended them.

E. SPENCER, M. D.,
Health Officer Charles County.

DORCHESTER COUNTY.

Dr. V. C. Carroll, Cambridge, Health Officer. No report.

FREDERICK COUNTY.

Dr. James M. Goodman, Frederick, Health Officer. No report.

GARRETT COUNTY.

Dr. N. I. Broadwater, Oakland, Health Officer. No report.

HARFORD COUNTY.

Dr. F. Lee Hughes, Bel Air, Health Officer. No report.

HOWARD COUNTY.

ELLICOTT CITY, MD., February 12, 1913.

Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.

Dear Doctor: I have the honor to submit the following report for Howard County for the year 1912.

There were 222 birth certificates sent to me to be recorded. Of this number only 23 were from midwives. It seems as though more cases than that must have been attended to by them.

There were 210 deaths recorded, 58 of these were of children under 5 years of age; 20 died from tuberculosis, 9 from typhoid fever, 11 from accidents and violence. To offset this unfavorable list, 46 lived to be over 70 years (one reached the age of 104), and were taken away more from old age than disease.

We have had a good deal of difficulty in getting reports from men who live in adjoining counties and who practice in Howard County to make reports to us, as the State office would not uphold us in suits if reports had been made to the officers of the home counties of the men.

There has been no serious epidemic during the year.

All nuisances but one have been corrected at once, and that without any difficulty. This one case is a very foul ditch by the State Road just outside of Ellicott City. There should be a sewer pipe put in here and the houses compelled to connect with same. There has been typhoid at this point every year for last five years.

Respectfully,

W. C. STONE, M. D.,
Health Officer Howard County.

KENT COUNTY.

GALENA, MD., March 21, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Doctor: I hereby submit my report for part of year from May 1, 1912, to December 31, 1912.

Total number of deaths, 204; white males, 63; white females, 42; colored males, 55; colored females, 44. Total number of births, 215; white males, 67; white females, 71; colored males, 44; colored females, 32. In one case sex not given. Deaths from tuberculosis, 25; contagious diseases reported: Typhoid fever, 20; measles, 2; chickenpox, 1; diphtheria, 5; scarlet fever, 1.

All houses in which tubercular patients have died have been fumigated. Some physicians in the county are very slow in making reports of contagious diseases and births, while the majority are very prompt. During this period seven midwives have been registered, all being colored. I spent one day with Mr. Hall, of the Sanitary Survey Department, at Worton, regarding the contamination of wells in that town from a cannery located there and found many unsanitary conditions closely located to the wells of that place. I wish to thank all the officials of the State Board of Health for the assistance they have rendered me in becoming familiar with my duties.

Respectfully yours,

GEORGE R. JONES, M. D.,
Health Officer Kent County.

MONTGOMERY COUNTY.

ROCKVILLE, MD., January 5, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Doctor: Enclosed please find report from 1911 to 1912. I was under the impression that this had been mailed until I ran across it this day. I am now compiling report of 1912-1913. Will send it as soon as completed.

The report of vital statistics for Montgomery County from January 1, 1911, to December 31, 1911, inclusive, is as follows:

Births: White male, 181; female, 125; total, 306. Colored male, 44; female, 44; total, 88. Grand total, 394.

Deaths: White male, 84; female, 75; total, 159. Colored male, 54; female, 45; total, 99. Grand total, 258. Thirty-six more births than deaths.

The principal causes of death were as follows: Tuberculosis, 44; lobar pneumonia, 24; broncho pneumonia, 13; total, 81.

Bright's disease, 22; cerebral hemorrhage, 22; heart disease, 22; typhoid, 9; cancer, 5; diphtheria, 1; infantile paralysis, 2; violence, 16.

In presenting these various causes and figures of mortality, it may be interesting to note that tuberculosis is the one great causative factor of death in our midst, twice as many have died of this disease in the county during the year as have died of either heart disease, cerebral hemorrhage and Bright's disease. Nearly twice as many as have died from pneumonia. While this is true and it behooves us to be constantly on guard against this fell disease—there are some mitigating features in connection therewith, one is that the number of deaths recorded during this year and the past year, while equal (there being 44 deaths last year also), shows an improvement over 1907, when 65 people died of tuberculosis. This improvement in the death rate is due to the effectiveness of the physicians in recognizing this disease earlier than formerly, and by their instructions to the patients how to take care of themselves during their illness, and also to their disinfections upon removal or death of people affected. In this crusade against tuberculosis the physicians have been ably supplemented by the different organizations of the county, chief among which is the Social Service League, who have employed a district nurse. This nurse has been of great assistance to the phy-

sicians with whom she has come in contact. But one person cannot effectively cover the county. The number of cases are too many and the territory too broad. It behooves us as citizens to do something to relieve the situation. This Great White Plague is the most threatening spectre we have in our midst, ever threatening our loved ones with the ravages of destroying disease that follows in its wake.

As has been done in previous years, we make comparison with the death rate of those two dreaded diseases, diphtheria and scarlet fever (1 from diphtheria and none from scarlet fever, 44 from tuberculosis), it would seem that any comment were unnecessary after glancing at the figures presented as they are.

If you wish to excite a community and see some of the number going about with bated breath, mention the fact that there is a case of diphtheria or scarlet fever in such a locality, and immediately there springs into existence a panic-stricken corps of sanitationists and hygienists, who are almost frantic in their efforts to protect their families; but mention to that same community the fact of a case of tuberculosis and the information is received with apathy and supineness, if not with absolute indifference, that there is in their midst a foe 44 times as malignant and dangerous as either one of the other two.

There must be a cause for this indifference, and that cause is a lack of education along the dangers of the disease, the public in time long past have been thoroughly educated as to the dangers of diphtheria and scarlet fever. They should be just as well educated in reference to tuberculosis. While the State has done something to ameliorate the ravages of this disease, still enough has not been done, and each county will have to do its own share to combat this foe.

The State has established a sanatorium where incipient cases are admitted and are either cured or taught how to live in the future, so that they will not be a menace to their community—now this is good work, but it does not go far enough. We have left in our midst the dangerous cases, the advanced cases, for whom there is no sanatorium; these cases, like the poor, are always with us.

The question naturally arises, what are we going to do with them. It is a condition that will have to be met and we had better meet it now than to wait until it gets too expensive. There are some lands that could be purchased now that are comparatively cheap, but will be more expensive in the future. On some such place these dangerous patients (too poor to pay for their own maintenance and support) could be gathered to-

gether and given proper nutrition and medical supervision, and cease to be the ever-threatening menace that they are while wandering indiscriminately through our county, infecting your children and mine. This is no overdrawn picture. I again refer you to our death rate. It is more largely prevalent among the people who do our work for us—our laundering, our house-cleaning, our cooking, and are we not to protect ourselves and our children?

As to other causes of death given, the ratio this year is a little less than last, with the exception of typhoid fever and diphtheria. This year we have 9 deaths from typhoid and 1 from diphtheria. As your executive officer, I've been called into a number of diphtheria and scarlet fever cases, but fortunately there was no widespread epidemic and only 1 death. I have avoided as far as possible to unnecessarily close schools. This in some instances seem to tend to spread an epidemic, especially in towns where the idle scholars will want to go and see the sick and often gain entrance.

I have made one or two talks upon tuberculosis upon invitation by school and church authorities. I have made quite a number of visits to various localities in our county to investigate complaints—some of them small matters, some very serious. I have made two or three trips to Silver Springs in reference to sewage disposal. On one of my visits I was accompanied by Dr. Rohrer, chief of the Bureau of Communicable Diseases for the State. I think that these visits have borne fruit, for the people of that suburb are about to connect up with the Takoma Park system, which will abate nearly all the nuisances complained of in the town. I also made a trip to Damascus, where there was an epidemic of typhoid fever. There were 11 cases at the time of my visit. This town from its situation should be the healthiest in the county—on its highest point and with the most splendid natural drainage. This is an old town and nearly every householder has stables and hog pens on his premises, and the inference is that some of the contamination has reached the water, for some of their well water submitted to the State Chemist showed contamination from sewage. Now, as they have no sewerage, it must be contaminated by the sources mentioned. This town is not incorporated, and I would advise that the County Commissioners promulgate some rules in reference to the hog pens and closets. The people themselves are willing and anxious to do what they can to ameliorate this condition. I have paid quite a number of visits to Bethesda, Chevy Chase, Drummond, Somerset Heights, Friendship Heights, The Hills, Lin-

den, Forest Glen and Woodsides. Nearly all these visits were for the purpose of investigating sewerage and polutions of streams. At some intermediate points and in Rockville have disinfected houses that had diphtheria, scarlet fever and tuberculosis patients in them.

Served notices upon 83 householders of the various communities along Little Falls Branch to abate the nuisance of polluting said stream. Upon one of my surveys of this stream, I was accompanied by Dr. Rohrer, chief of the Bureau of Communicable Diseases, who made a full and complete report of conditions existing there to the State Board of Health. He also advised what remedies should be made, and it was in pursuance of his recommendation and also of Dr. Price, the State Health Officer, that these notices were served, but following this there was a movement started to procure sewerage for all of that part of the county, which is surely needed and will be most beneficial when established, but the complainants living below the sources of these pollutions are still suffering and complaining.

The health of the county is good, very good, indeed, at the present time, and has been for the last two or three years. No great amount of general sickness has existed for nearly three years, when physicians were overworked.

Only two deaths this year from infantile paralysis. I hope that it has disappeared from our midst.

Yours truly,

CLAIBORNE H. MANNAR,
Health Officer Montgomery County.

PRINCE GEORGE'S COUNTY.

Dr. J. E. Sansbury, Forestville, Health Officer. No report.

QUEEN ANNE'S COUNTY.

Dr. A. E. Landers, Crumpton, Health Officer. No report.

ST. MARY'S COUNTY.

Dr. F. F. Greenwell, Leonardtown, Health Officer. No report.

SOMERSET COUNTY.

Dr. T. Jacob Smith, Princess Anne, Health Officer. No report.

TALBOT COUNTY.

Dr. E. R. Trippe, Easton, Health Officer. No report.

WASHINGTON COUNTY.

HAGERSTOWN, MD., February 19, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Dr. Fulton: I beg leave to make the following report from the time of my qualification, September 28, 1912, to December 31, 1912.

During these three months, I have received and recorded certificates of births and deaths as follows:

Births: White male, 184; female, 175. Colored male, 6; female, 5. Making a total of 370 births.

Deaths: Tuberculosis, 18; diphtheria, 6; scarlet fever, 1; pneumonia, 13; typhoid fever, 5; whooping cough, 1; meningitis, 7; accidents, 18; Bright's disease, 32; entero colitis, 15; paralysis, 14; cancer, 6; septicemia, 3; obstruction of bowels, 4; la grippe, 1; diabetes, 1; other diseases, 67. Making a total of 231 deaths.

Contagious Diseases—There were reported to the health officer during the three months of the year 1912 that I have served 59 cases of diphtheria, with 6 deaths. Scarlet fever numbered 55 cases, with one death. Measles numbered 53 cases, with no deaths. Chickenpox numbered 24 cases, with no deaths. Typhoid fever numbered 51 cases, with 5 deaths. Malaria fever numbered 2 cases, with no deaths.

I have fumigated 47 houses and apartments where diphtheria cases had been reported and 28 houses and apartments where scarlet fever cases had been reported. I also fumigated 12 houses which were vacated by tubercular patients and 18 houses after the death of tubercular patients.

Under the tuberculosis law, I issued 5 original and 26 renewal prophylactic packages.

There were eleven nuisances reported and abated during these three months.

There were no midwife registrations and no prosecutions.

An endemic of scarlet fever occurred in the small town of Ringgold the latter part of October and the first part of November. Eight cases were reported. I closed the schools and fumigated the building. When school was reopened, all cases were under strict quarantine and this ended all trouble.

The County Commissioners meet once every month as a Board of Health, at which time are discussed ways and means for the handling of sanitary problems in the county.

Very respectfully,

W. D. CAMPBELL, M. D.,

Health Officer Washington County.

WICOMICO COUNTY.

Dr. Chas. R. Truitt, Salisbury, Health Officer. No report.

WORCESTER COUNTY.

Dr. Paul Jones, Snow Hill, Health Officer. No report.

LIST OF COUNTY HEALTH OFFICERS

Allegany County.....	Dr. J. C. Holdsworth.....	Midland.
Anne Arundel County.....	Dr. Walton H. Hopkins.....	Annapolis.
1st Precinct.....	Dr. Chas. H. Brooke.....	Brooklyn.
3d Precinct.....	Dr. Thomas B. Horton.....	South Baltimore.
Baltimore County.....	Dr. Henry M. Slade.....	Towson.
1st District.....	Dr. Marshall B. West.....	Catonsville.
2nd District.....	Dr. H. F. Shipley.....	Granite.
3rd District.....	Dr. Henry A. Naylor.....	Pikesville.
4th District.....	Dr. Henry M. Slade.....	Reisterstown.
5th District.....	Dr. C. E. Fowble.....	Upperco. R. F. D.
6th District.....	Dr. Joseph Baldwin.....	Freeland.
7th District.....	Dr. E. W. Heyde.....	Parkton.
8th District.....	Dr. Benj. Benson.....	Cockeysville.
9th District.....	Dr. Claude C. Smink.....	Lauraville.
10th District.....	Dr. J. T. Payne.....	Phoenix. R. F. D. No. 1.
11th District.....	Dr. J. F. H. Gorsuch.....	Fork.
12th District.....	Dr. Wm. E. McClanahan.....	Highlandtown.
13th District.....	Dr. Frank H. Ruhl.....	Lansdowne.
14th District.....	Dr. Wm. F. Clayton.....	Overlea.
15th District.....	Dr. John W. Harrison.....	Middle River.
16th District.....	Dr. G. C. McCormick.....	Sparrows Point.
Calvert County.....	Dr. I. N. King.....	Barstow.
Caroline County.....	Dr. J. R. Downes.....	Preston.
Carroll County.....	Dr. Chas. R. Foutz.....	Westminster.
1st District.....	Dr. Franklin H. Seiss.....	Taneytown.
2nd District.....	Dr. Luther Kemp.....	Uniontown.
3rd District.....	Dr. G. Lewis Wetzel.....	Union Mills.
4th District.....	Dr. Robert F. Wells.....	Gamber.
5th District.....	Dr. M. D. Morris.....	Eldersburg.
6th District.....	Dr. John F. B. Weaver.....	Manchester.
7th District.....	Dr. Chas. R. Foutz.....	Westminster.
8th District.....	Dr. R. C. Wells.....	Hampstead.
9th District.....	Dr. Edwin D. Cronk.....	Winfield.
10th District.....	Dr. Chas. H. Diller.....	Detour.
11th District.....	Dr. George H. Brown.....	New Windsor.
12th District.....	Dr. James Watt.....	Union Bridge.
13th District.....	Dr. Ira D. Chaney.....	Mt. Airy.
14th District.....	Dr. Daniel D. Sprecker.....	Sykesville.
Cecil County.....	Dr. T. J. Conrey.....	Chesapeake City.
Charles County.....	Dr. E. Spencer.....	Bel Alton.
Dorchester County.....	Dr. V. C. Carroll.....	Cambridge.
Frederick County.....	Dr. James M. Goodman.....	Frederick.
Garrett County.....	Dr. N. I. Broadwater.....	Oakland.
Harford County.....	Dr. Lee Hughes.....	Bel Air.
Howard County.....	Dr. Wm. C. Stone.....	Ellicott City.
1st District.....	Dr. Wm. R. Eareckson.....	Elkridge.
2nd District.....	Dr. W. C. Stone.....	Ellicott City.
3rd District.....	Dr. B. F. Shipley.....	Alpha.
4th District.....	Dr. J. W. Sims.....	Glenwood.
5th District.....	Dr. S. A. Nichols.....	Dayton.
6th District.....	Dr. T. W. Linthicum.....	Savage.
Kent County.....	Dr. Geo. R. Jones.....	Galeua.
Montgomery County.....	Dr. C. H. Mannar.....	Rockville.
Prince George's County.....	Dr. John E. Sansbury.....	Forestville.
Queen Anne's County.....	Dr. A. E. Landers.....	Crumpton.
Saint Mary's County.....	Dr. F. F. Greenwell.....	Leonardtown.
Somerset County.....	Dr. T. Jacob Smith.....	Princess Anne.
Talbot County.....	Dr. E. R. Trippe.....	Easton.
Washington County.....	Dr. W. D. Campbell.....	Hagerstown.
Wicomico County.....	Dr. Chas. R. Truitt.....	Salisbury.
Worcester County.....	Dr. Paul Jones.....	Snow Hill.

Report of Town Health Officers.

ABERDEEN.

ABERDEEN, MD., January 3, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Doctor: I herewith enclose my report for year 1912, as local registrar of Aberdeen.

Births: White male, 5; white female, 4; total, 9.

Deaths: White male, 2; white female, 5; total, 7.

Infectious Diseases—Diphtheria, 1 case, colored (female), recovered. No other infectious diseases for the year.

Very truly yours,

CHAS. H. KRIETE,
Health Officer, Aberdeen.

ANNAPOLIS.

Dr. Wm. S. Welch, Health Officer. No report.

BRUNSWICK.

BRUNSWICK, MD., March 1, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Doctor: In submitting my report as health officer of Brunswick for the year 1912, as I respectfully do, there is nothing that calls for special mention, unless it is our typhoid

fever cases. Sixteen in number, with only one death, and that in a child. Most of the cases were mild and distributed through the year, as follows: January 1 case; March, 3; April, 2; May, 1; June, 1; August, 3; September 5; and no cases reported for the last three months of the year. This is certainly a good showing for a town of five thousand inhabitants, and as I have mentioned in former reports, largely due to a pure water supply.

Brunswick is also comparatively free from tuberculosis. There were three deaths during the year from that disease. There are now three cases at the State Sanitarium with it, all improving rapidly, and no other cases in town known to this office.

Following is statistical report:

Births reported, 136; living males, 76; females, 53. Still-births, male, 4; female, 3.

Deaths reported, 53. Adults, 17 with cause; killed by cars, 4; cerebral hemorrhage, 4; tuberculosis, 2; heart disease, 2; pneumonia, 1; Broncho pneumonia, 1; uterine corcevis, 1; anasarca, 1, and nephritis, 1; infantile deaths, 36, with causes: premature births, 8; still-births, 7; marasmus, 4; pneumonia, 4; broncho pneumonia, 3; membranous croup, 3; meningitis, 2; typhoid fever, 1; tuberculosis, 1; acute nephritis, 1; heart disease, 1, and found dead, 1.

Contagious diseases: Typhoid fever, 16; scarlet fever, 6; diphtheria, 4; measles, 13; chickenpox, 1.

Drinking cups are no longer used in public schools, Y. M. C. A. and railroad stations. Vaccinations at schools is thorough. There has been an unusual number of cases of pneumonia this winter, but low mortality rate.

Respectfully,

LEVIN WEST,

Health Officer, Brunswick.

CAMBRIDGE.

Dr. E. E. Wolff, Health Officer. No report.

CRISFIELD.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Doctor: I have the honor to submit the following annual health report of Crisfield, closing with the fiscal year, June 30th, 1912.

Births: 96; white, 69; males, 38; females, 31. Colored, 27; males, 16; females, 18.

Deaths: 84: white, 44; males, 26; females, 18. Colored, 40; males, 22; females, 18.

Infectious diseases reported: Diphtheria, 6; scarlet fever, 20; typhoid fever, 65; whooping cough, 17; chickenpox, 2; tuberculosis, 19.

Fumigations, 36. 27 of which were done by the health officer.

All the schools were visited, and every child not previously vaccinated was vaccinated, unless some very good reason was offered. There were 91 vaccinations; 57 of which were paid by the individuals.

All school rooms in the city were fumigated last September before opened to the public. Several public school books were condemned and burned.

Prophylactic supplies have been issued promptly to all persons suffering with pulmonary tuberculosis.

All houses vacated by tubercular persons were fumigated as soon as reported, and in no instance has the health officer knowingly allowed another family to move in the house until the premises were disinfected.

Every house in which a tubercular patient has died, and same reported to health officer, has been disinfected within 24 hours after the burial of the deceased consumptive.

We have not allowed any tubercular persons to open oysters or pick crab meat in packing houses.

An effort is made to secure other employment for such persons when it is not convenient for them to take treatment in the State Sanatorium.

The facilities for the isolation and treatment of advanced cases of consumption are extremely poor, and this alone has done more to spread this awful plague in our midst than any other cause.

We are glad to note that the Eastern Shore is soon to have in operation at Salisbury, a sanatorium for advanced cases.

We have during the year passed an ordinance for Crisfield on expectoration, which, we believe, will lessen the danger of consumption.

The law relative to the individual drinking cup is being enforced with good results.

Dry sweeping and dusting has about passed away. Oil and dust layer are generally used; and an effort will be made this year to abandon all dry sweeping and dusting.

The ordinance passed last year not permitting any pig pen within 100 feet of any residence, has resulted in making the pig pen and its many evils a past history.

Free school books are doubtless responsible for a certain percentage of childhood diseases.

The health officer recommends a cheap text book which could be given to the pupil, not to be returned, and passed on to the second or third hands and endangering their lives.

The new high school of our city has greatly improved the sanitary conditions of school life.

No polluted waste matter is allowed to be emptied in our harbor or adjacent waters, thus protecting our oyster industry.

A recent analysis, both chemical and bacteriological, of our city water shows it to be satisfactory and free from all dangerous bacteria.

The chemical analysis of the shallow well gives a rather large percentage of chlorine, and we are recommending a new well to be driven in place of this one.

We are glad to note that some action is to be taken in the near future to abate Crisfield's greatest nuisance, viz: a large open ditch extending from the eastern boundary of our town to the western limits.

Our town, not being able to enstall a sewer system, is preparing to build a large concrete reservoir, into which the contents of all cesspools must be emptied, and the same treated chemically.

The removal of garbage weekly has made a wonderful improvement in the sanitary conditions.

The "Clean-Up Week" was a great success. A large number of citizens co-operated in the good work.

Every back yard was visited by a man with a horse and cart, and waste matter of almost every form was removed. More than 100 loads were carried on the marsh.

The milk supply for Crisfield has improved very little during the last year. Mainly because the consumer does not demand the modern method of dispensing.

We are glad to note that some of our dairymen are using the bottle system; but no cooling system is used to our knowledge.

At the present time all surface drains are being cleaned, and every effort is being made to render Crisfield as healthful as possible.

The health officer has personally made two thorough inspections of the town during the year; visited the public schools four times; inspected all packing houses and factories; made many visits to places reported unsanitary, and had same corrected; written more than 100 letters to persons calling their attention to certain things which menace public health.

A rigid quarantine has been enforced in all cases of diphtheria and scarlet fever, and I am pleased to state that there has been a decrease of 77% from the last year.

The health officer has met with the Mayor and Council at every monthly meeting at which time the monthly report has been submitted, and recommendations made for the improvement of local sanitary conditions.

Signed,

C. E. COLLINS, M. D.,
Secretary Crisfield Board of Health.

CUMBERLAND.

CUMBERLAND, MD., March 12, 1913.

Dr. John S. Fulton,

*Secretary, State Board of Health,
Baltimore, Md.*

Dear Doctor: I submit herewith the annual report of the Health Department of the City of Cumberland for the year 1912.

1. *Vital Statistics*—During the year 1912 the registration of vital statistics in this city have greatly improved. The new vital statistic law has brought about improved conditions. During the year there were reported 644 births and 34 stillbirths. With an estimated population of 23,000, the birth rate was 28.04 per 1,000 population. The reports for 1911

were: Births, 582; still-births, 26, with a rate of 25.86 per 1,000 population. For the same period there were reported 377 deaths, exclusive of still-births. With the same population figures this will give a mortality rate of 17.86 per 1,000 population. Of the total number of deaths reported, there were 77 deaths due to causes arising outside of the city and in other States. The revised death rate for the city is 13.04 per 1,000 population. In 1911 there were 383 deaths reported, exclusive of still-births, giving a mortality rate for the city after deducting the deaths due to foreign causes (68) as 14.00 per 1,000 population. The still-births for 1911 were 26. From January 1, 1912, to December 31, 1912, there were issued burial and transit permits for all deaths in the city.

2. During 1912 there were 9 midwives under the law permitting registration of those engaged in the practice prior to the passage of the act.

3. The following infectious diseases were reported during the year: Tuberculosis, reported, 66; died, 31. Typhoid fever, reported, 178; died, 10. Out-of-town infection, reported, 56; died, 5. Scarlet fever, reported, 34; died, 2. Diphtheria, reported, 41; died, 3. Measles, reported, 502; died, 4. German measles, reported, 4; died, 0. Whooping cough, reported, 12; died, 1. Chickenpox, reported, 24; died, 0. Infantile paralysis, reported, 2; died, 1. Smallpox, reported, 14; died, 0. Spinal meningitis, reported, 2; died, 2. Mumps, reported, 6; died, 0. Erysipelas, reported, 3; died, 2.

There was an epidemic of measles during May, June and July, which was investigated by Dr. Rohrer. During November and December a slight outbreak of smallpox was being handled which was still prevalent at the close of this report. All patients of the latter disease were turned over to the county for treatment in the County Hospital. This outbreak was also investigated by Dr. Rohrer. The usual method of quarantine was instituted and necessary steps taken to prevent the unusual spread of the disease. In the instance of all contagious diseases, the premises are placarded and quarantined, and fumigated upon the termination of the disease, with the potash-formalin method.

4. All cases of tuberculosis are recorded in the office and prophylactic supplies issued through the tuberculosis nurse. Fumigation is done upon the death or removal of all patients suffering from the disease.

5. This office has no jurisdiction over the requirements of the vaccination law for school children. In the presence of smallpox, all contacts and exposures were vaccinated.

6. The public schools coming under the jurisdiction of the county, this department has exercised no active control, beyond the notification of the existence of a communicable disease among the pupils.

7. Reportable nuisances have become less as the months pass. The department has made a crusade against the surface privy and hundreds of these pest holes have been removed and properties connected with the city sewers. The engineer's office has made upward of 300 connections, and 850 permits for sanitary plumbing were issued by this office.

8. The general water supply of the city is from wells, cisterns and springs. The piped water supply of the city is in a frightfully unsanitary condition and not fit for drinking purposes. The city now has under way a \$500,000.00 water system which when completed in June next will supply the city with a potable water purified by the mechanical method of filtration.

9. Efforts have been made from time to time to get a better control of the production and sale of milk. The State Live Stock Board have paid little heed to the situation. The State Board of Health has from time to time made inspections under the pure food law.

10. The administrative affairs of the office are in the hands of a stenographer-clerk. All records are kept in files and all records made and kept accurately.

11. The City Board of Health meets on the first Monday of the month. The greater part of the workings of the office are left in the hands of the secretary-health officer.

The appropriation for the year (April to April), including all salaries and expenses, \$3,800.66. In addition to this the expense for the smallpox outbreak for 1912 will amount to about \$1,400.00.

12. The Health Department has in use a modern and up-to-date laboratory for bacteriological purposes.

Respectfully,

FRANCIS E. HARRINGTON,
Health Officer, Cumberland.

EASTON.

EASTON, MD., February 25, 1913.

*Dr. John S. Fulton,**Secretary, State Department of Health,
Baltimore, Md.*

Dear Doctor: I have the honor to make my first annual report as health officer of Easton. I was appointed in September, therefore my report will be from September 1 to January 1.

Vital Statistics—This comes entirely under the head of Talbot County, therefore I, as health officer of Easton, have had nothing whatever to do with same.

There has been no registration of midwives in Easton as far as I know, nor any attempt to enforce this law by the City Health Board. I believe this also comes under county board. I have no knowledge of any attempt by them to enforce this law.

In October we had a small epidemic of diphtheria in and around Easton; we closed the schools, fumigated the primary school and the homes of all persons reported having the disease who lived in the limits of our city. The city furnished anti-toxin in all cases where the physician in charge stated that the families were unable to pay for same. We soon had an alarming situation under control. Eight cases in six different families who reported in October and one in November within our city limits. There was one case of whooping cough reported in December. There has been no cases of typhoid reported as yet, but by this statement I do not wish to infer that there were no cases in our city.

We have fumigated 9 rooms where persons died of tuberculosis and issued supplies to three new cases.

Our school authorities are very rigid in their rules in regard to vaccination. Every child before being allowed to enter school must have a vaccination certificate, properly filed out and signed by a physician.

Nuisances—There were several nuisances reported to me, but as Easton has just finished a complete sewage system and said nuisances would be corrected shortly by connecting up said system, I thought it wise to take no steps in the matter.

Respectfully submitted,

JAMES B. MERRITT, 3RD, M. D.,

Health Officer, Easton,

FREDERICK.

Dr. Ira J. McCurdy, Health Officer. No report.

FROSTBURG.

Dr. Timothy Griffith, Health Officer. No report.

HAVRE DE GRACE.

Dr. W. F. Steiner, Health Officer. No report.

HANCOCK.

Dr. H. E. Tabler, Health Officer. No report.

KENSINGTON.

Dr. Wm. L. Lewis, Health Officer. No report.

LAUREL.

Dr. W. F. Taylor, Health Officer. No report.

LONACONTING.

Dr. James O. Bullock, Health Officer. No report.

MT. RAINIER.

MT. RAINIER, MD., January 28, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Doctor: I hereby submit my annual report for the year 1912 for Mt. Rainier, Md., to wit:

Births, including Brentwood, were 55; females, 24; males 31.

Deaths, 29; males, 16; colored, 2; white, 14; females, 13; colored, 3; white, 10. Children under 2 years, 13; 20 years and over, 16.

Burial permits issued during year, 29.

Transportation permits included in above, 7.

The deaths were divided as follows: Cancer, including of breast, liver, stomach and uterus, 5; tuberculosis, 3; lobar pneumonia, 3; whooping cough, 2. The following one each: Valvular disease of heart, congenital debility, accidental drowning, poliomyelitis, enterocolitis, premature birth, cardiac syncope, albuminuria, pneumonia, dilatation of heart, cholera infantum, amaciation, dysentery, paralysis, cerebral hemorrhage and a second premature birth.

There were no illegal interments, prosecutions and no convictions. There are no midwives licensed in this district, but there are 4 physicians registered.

There were only 65 cases of contagious diseases reported. Whooping cough was epidemic throughout this section from March 18 to July 20.

Whooping cough, 56; diphtheria, 3; infantile paralysis, 2; one each of the following: Chickenpox, scarlet fever, mumps, and tuberculosis. None reported since November 27.

I distributed two packages of prophylactic supplies, one in Hyattsville and in Mt. Rainier. The instructions given by physicians have been effective in every case.

Vaccination has been generally done prior to school days; there has not been any cases of smallpox in this locality.

The common drinking cup has been generally abandoned since I sent the notice to each and every store, school, both public and private; in each the children were compelled to procure their own cups. In the stores the glasses are immediately washed and sterilized before being used again, the public school is heated by furnace, the public hall by hot water, lighted by electric light.

I had 150 complaints during the year of nuisances, had 135 abated, with 15 still remaining unabated. These consisted of violations of the town ordinances, but after notice they were readily overcome and with no trouble, thus avoiding any disagreeableness.

The water supply in this town comes from wells and springs, the water of which have been examined. In each they have been more or less found to be contaminated by underground pollutions. There were about 50 or more samples sent by citizens and myself to the chemist.

The milk question has become somewhat of a serious thought. the condition of the cows, stables and dairy farms have been very lax, but are at the present time being looked after, and laws affecting them are being passed to overcome the conditions existing. The milk of the dairies have been analyzed; in one case was it pronounced bad.

All records, births and death certificates are kept under lock and key. The births and deaths are entered in upon the records as soon as received, dated and signed put away until the end of month, when they are sent to the Board of Health.

The Health Committee has been called in session each and every month during the year, for the purpose of discussing the general conditions of the town and how best to overcome the conditions, minutes are kept and filed for future reference, the disposition of complaints and the management of contagious diseases I myself attend to.

The Mayor and Council allow me to order anything that is required for any contagious cases and send them the bill. Last year I fumigated 8 houses containing 50 rooms for contagious diseases; the fumigation used was formaldehyde-permanganate in each instance.

The tax levy in the incorporation is twenty (20) cents on the hundred. The town pays its health officer fifty (\$50) dollars a year, and all extra legitimate expenses.

During the year I had to call a coroner in a case to determine what the cause of death was in a case where no physician was in attendance. The jury brought in verdict that the child died from amaciation and lack of care on the part of the mother; also that she should be examined as to her sanity, whereupon she was pronounced insane and recommended to the County Commissioners to be sent to an institution, which they did.

I have had laws drafted regulating the building, location of toilet and cesspools to be built after the passage of these laws,

also governing those in existence now, which the Mayor and Council passed and enacted into immediate laws.

I am waiting for the Mayor and Council now to pass some laws that I have drafted to govern the sale, production, etc., of milk in this town; also regulations governing dairy farms, stables, cows, utensils, milk, etc.

I am more than thankful to your board and the members thereof especially for the kind and courteous manner they have shown me during the year. I am very thankful to Dr. Penniman for his assistance he has given me in the water and milk question, and his able assistant, L. L. Judge, in giving me an opportunity to find the true conditions existing here. The other chiefs of your departments have also my best wishes and long-continued public life of usefulness. I remain,

Yours very truly,

J. C. OHLANDORF, M. D.,
Health Officer of Mt. Rainier.

OLNEY DISTRICT.

OLNEY DISTRICT, MD., February 12, 1913.

Dr. John S. Fulton,

*Secretary, State Board of Health,
Baltimore, Md.*

Dear Sir: In compliance with request, I transmit the following report from January 1 to December 31, 1912.

At a regular meeting of our board held June 25, 1912, the subject of admitting as auxiliary members some of the prominent ladies of our district received attention, and upon consideration, realizing that they were as vitally affected by good health conditions around the home, and the community at large as the men, quite a number were voted members. They seem interested, attend the meetings, and we believe they will be quite an aid in trying to better sanitary conditions in our district.

Sixty-three burial permits were issued. No prosecutions or convictions occurred, though in respect to midwives it is believed some of them are practicing without a license, but all of them have registered as far as known.

Apartments that have been occupied by those having infectious and contagious diseases are fumigated and disinfected, barring whooping cough, which has been scattered over nearly

the whole district. Several very young children have died of the disease during the year.

Our statistics in regard to tuberculosis remains about the same. The district lying as it does between the great cities of Baltimore and Washington is unduly exposed to the disease, because cases are sent from these cities to have the benefit of our fresh, pure air, as the land is elevated at about 400 feet above tide water. There being several large settlements of colored people who suffer most on account of their unsanitary mode of life, and conditions would account also in part for our percentage of cases. Without exception, fumigation and disinfection is performed where known to exist.

Vaccination is carefully attended to, and no one is allowed to go to school unless done.

Our Board of Health continues to meet every three months, as from the beginning, and our next meeting is to occur on March 25, which will be the 125th meeting since we organized under legislative act in 1884. During this time a great amount of work for the public has been done of an altruistic nature, for the members get no salary, or mileage, but an occasional kick for abating nuisances and quarantining premises where needed.

According to interpretations from the instructions from your office, no statistics of births, or deaths, have been kept or retained in my office since, but sent to you and to our county health officer, who will be in a position to give you these statistics.

Very respectfully submitted,

CHAS. FARQUHAR, M. D.,
Health Officer, Olney District.

POCOMOKE CITY.

Dr. R. Lee Hughes, Health Officer. No report.

SPARROWS POINT.

SPARROWS POINT, MD., January 23, 1913.

Dr. John S. Fulton,
Secretary, State Board of Health.
Baltimore, Md.

Dear Sir: This is a copy of the annual report I make to the officials of the Maryland Steel Co. and, thinking that it may

possibly be of some interest to you, I am taking the liberty of sending it.

Births: White, 92; colored, 24; white, 72; colored, 44; total, 116.

Deaths: White, 35; colored, 8; male, 25; female, 18; total, 43.

Contagious Diseases: Diphtheria, 28; scarlet fever, 16; measles, 6; chickenpox, 11; typhoid fever, 9; total, 70. White, 51; colored, 19; male, 32; female, 38.

Houses fumigated: school house and kindergarten each fumigated twice. Shanties inspected in April, August and November, and recommendations as to improvement in their sanitary conditions made to the Real Estate Department. Unsanitary conditions of closets and drains were reported to the Real Estate Department at various times, and the conditions were improved. During the spring and summer the greater part of the town has been supplied with covered garbage cans, and the number of flies during the summer was noticeably lessened. Oil applied to marshes and pools in the spring did not seem to be as effective as formerly, as mosquitoes were quite abundant during the summer, and in consequence much malaria prevailed during the fall.

This is for Sparrows Point alone, the population of which at the last police census is 5,743.

Very respectfully,

G. C. McCORMICK, M. D.,
Health Officer, Sparrows Point.

TAKOMA PARK.

TAKOMA PARK, MD., February 11, 1913.

*Dr. Frederick V. Beidler,
Registrar of Vital Statistics,
6 East Franklin Street,
Baltimore, Md.*

Dear Sir: In reporting the vital statistics for the Town of Takoma Park for the year 1912, the attached statements indicate that there were twenty deaths in the town during the year, ten of these persons being transients, patients at the Washington Sanitarium. The remaining number constitute a death rate of 6.01 per thousand, or considerably less than half the average death rate throughout the country.

The total number of births was twenty-six. Of infectious diseases there were twenty-eight cases reported. Of this number, thirteen were cases of whooping cough, eleven of measles, two of scarlet fever and two of typhoid fever, the latter disease in both cases being contracted outside this jurisdiction. All cases requiring fumigation were promptly attended to at the required time. The number of cases of infectious diseases was larger than in former years; but these were uniformly of a light character, no fatalities occurring.

The following were the deaths, with the date, name, age, and cause of death:

January 3, Elizabeth Collins, 86, Arterio Sclerosis.
 January 31, James Davis, 84, Cerebral Hemorrhage.
 March 8, *Arabella E. Burns, 70, Bright's Disease.
 April 22, Albert Thomas Riddle, 53, Cerebral Hemorrhage.
 April 28, *Anna A. Haines, 61, Peritonitis.
 June 30, *Ida J. Vance, 54, Mitral Regurgitation.
 July 3, Thomas J. Parker, 52, Cerebral Hemorrhage.
 July 5, George N. Beale, 82 Cerebral Hemorrhage.
 July 19, James F. Phillips, 54, Cerebral Hemorrhage.
 July 23, Robert Allen Stevens, 2, Dysentery.
 July 25, *Laura Meigs Akerley, 79, Arterio Sclerosis.
 August 3, *Mary Ford, 65, Arterio Schlerosis.
 August 8, *Sophia L. Roberts, 47, Valvular Heart Disease.
 August 10, *Helen V. Corson, 59, Intestinal Obstruction.
 October 25, *Fannie Cohen, 74, Esophageal Stricture.
 October 29, *Julia Squiers Barker, 82, Dysentery.
 November 1, *Charles Frederick Larabee, 69, Chronic Endocarditis.
 November 6, Helen M. Colburn, 68, Cerebral Hemorrhage.
 November 28, Janet Macallister, 70, Valvular Heart Disease.
 December 24, Harold E. Kinter, 1 day, Convulsions; Weak Heart.
 *Transients (patients at the Washington, D. C., Sanitarium).
 Total deaths, 20; of transients, 10; of residents, 10.

The following were the births, with date, name, sex and name of father:

January 23, Evelyn Lucille White, female, James M. White.
 February 7, Winifred Mary Chase, female, William M. Chase.
 February 17, Howard Thompson, male, Arthur A. Thompson.
 February 18, Albert Edwyn Cole, male, Albert Cole.
 March 29, Margaret Ella Brensinger, female, Howard D. Brensinger.
 April 7, Wallace Vernon King, male, Harry L. King.
 April 11, Elizabeth Gray Findlay, female, John Findlay.
 June 18, Kenneth Beverly Fisher, male, Harold B. Fisher.
 July 6, Helena Gertrude Herrell, female, Henry W. Herrell.
 July 24, Edith Wayne, female, William Henry Wayne.
 July 24, Horace Usher Ohm, male, Lewis A. Ohm.
 August 4, Kenneth Smith, male, Harold G. Smith.
 August 14, Elizabeth Barrett Coon, female, Datus E. Coon.
 August 15, Henry Lewis Kuhn, male, Otto B. Kuhn.
 September 5, Barbara Doris Kirstein, female, Wm. Kirstein.
 September 15, Tate Van Eman Zytoskee, male, Adrian E. Zytoskee.
 September 17, Asenath Alberta Heale, female, Albert A. Heale.
 October 18, Joshua Hopkins Skinner, male, Joshua J. Skinner.
 September 28, Huron Maybee Smith, male, Clarence Beaman Smith.
 October 13, Chas. Andrew Hite, male, John W. Hite.

October 28, Amos Burgess Blackburn, male, Geo. M. Blackburn (colored).

November 6, Dorothy Studt, female, Ray Nash Studt.

November 23, George Griffith, Rabbitt, male, George G. Rabbitt.

November 23, Nevins Morelle Harlan, male, Sanford M. Harlan.

December 22, Harold E. Kinter, male, W. M. Kinter.

December 22, Lewis Kinter, male, W. M. Kinter.

Total births during 1912, 26.

The following infectious diseases were reported, with date, diseases, name of person, and when and by whom fumigated:

January 10, Typhoid Fever, Mrs. Harriet A. Jeffers, by Washington Sanitarium.

February 20, Typhoid Fever, A. J. Bennett, by Washington Sanitarium.

(Both cases above were contracted outside this jurisdiction.)

May 6, Whooping Cough, Edward Payne.

May 6, Whooping Cough, David Findlay.

May 6, Whooping Cough, Helen Findlay.

May 6, German Measles, R. L. Hendrick.

May 16, German Measles, Alfred Ashley.

May 16, German Measles, Winnie Bowen, May 22.

May 16, German Measles, Willie Bowen, May 22.

May 16, German Measles, Cordelia Loftfield, May 28.

May 17, German Measles, Ethel M. Boyd, May 28.

May 17, Whooping Cough, Marie Rogers.

May 20, Whooping Cough, Oswald Longstreeth.

May 20, Whooping Cough, Brenton Schofield.

May 20, Whooping Cough, Marian Jack.

May 20, Whooping Cough, Paul Jack.

May 20, Whooping Cough, Naomi Jack.

May 20, Whooping Cough, Elisabeth Jack.

May 31, Measles, Pearl Roggenkamp.

May 31, German Measles, Mabel Bowen.

June 7, Measles, Eva L. Boyd.

July 2, Measles, Genevieve Town, July 11, at expense of N. Z. Town

October 14, Scarlet Fever, Marian Jack, November 12.

October 15, Measles, Glanville Thompson, October 31.

November 20, Scarlet Fever, Pearl Roggenkamp, December 13.

December 2, Whooping Cough, Robert Ashley.

December 2, Whooping Cough, Alfred Ashley.

December 2, Whooping Cough, Donald Ashley.

Respectfully submitted,

H. E. ROGERS,

Local Registrar.

LIST OF TOWN HEALTH OFFICERS.

Aberdeen.....	Dr. Chas. R. Kriete.....	Harford County.
Annapolis.....	Dr. Wm. H. Welch.....	Anne Arundel County.
Brunswick.....	Dr. Levin West.....	Frederick County.
Cambridge.....	Dr. E. E. Wolff.....	Dorchester County.
Crisfield.....	Dr. C. E. Collins.....	Somerset County.
Cumberland.....	Dr. F. E. Harrington.....	Allegany County.
Easton.....	Dr. Jas. B. Merritt.....	Talbot County.
Frederick.....	Dr. Ira J. McCurdy.....	Frederick County.
Frostburg.....	Dr. Timothy Griffith.....	Allegany County.
Garrett Park.....	Through Co. Health Officer.	Montgomery County.
Havre de Grace.....	Dr. W. F. Steiner.....	Harford County.
Hancock.....	Dr. E. H. Tabler.....	Washington County.
Kensington.....	Dr. Wm. L. Lewis.....	Montgomery County.
Laurel.....	Dr. W. F. Taylor.....	Prince George's County.
Lonaconing.....	Dr. James O. Bullock.....	Allegany County.
Midland.....	Dr. T. H. Charles.....	Allegany County.
Mount Ranier.....	Dr. J. C. Ohlendorf.....	Prince George's County.
Olney.....	Dr. Chas. Farquhar.....	Montgomery County.
Pocomoke City.....	Dr. R. Lee Hall.....	Worcester County.
Takoma Park.....	Dr. H. E. Rogers.....	Montgomery County.
Westernport.....	Dr. A. B. Kalbaugh.....	Allegany Count.

Sanitary Surveys and Investigations.

TYPHOID FEVER AT CATONSVILLE, JANUARY AND FEBRUARY, 1912.

February 13, 1912.

Dr. John S. Fulton,

Secretary, State Department of Health,

Baltimore, Md.

Dear Dr. Fulton: I have the honor to submit herewith my report of an epidemic of typhoid fever at Catonsville, Baltimore County, occurring in January and February of the present year.

My investigations were made on February 1 and 12. There is a total of ten cases of sickness, details of which will be furnished later in this report.

PREVIOUS TYPHOID.

The first recorded epidemic of typhoid fever at Catonsville occurred in late summer and early autumn of the year 1898. There were twenty-four cases of sickness. From that day down to the present time a few sporadic cases have occurred. For purposes of comparison the Catonsville morbidity and mortality for the last four years, 1908, 1909, 1910 and 1911, will be arranged under an appropriate table. (See Table No. I).

By referring to this table it can be readily seen that no real epidemic of typhoid fever prevailed in Catonsville from 1898 down to the present time (January-February, 1912). The present epidemic is a very unfortunate occurrence, manifesting itself as it has done in the families of persons whose sanitary surroundings are of the best.

TABLE NO. I.

TYPHOID MORBIDITY AND MORTALITY, CATONSVILLE.

		JAN.		FEB.		MAR.		APR.		MAY.		JUN.		JUL.		AUG.		SEP.		OCT.		NOV.		DEC.		TOTAL.	
YEAR.		Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.	Morbidity.	Mortality.
1908	.....	1	0	0	1	0	2	0	0	0	2	1	1	0	3	1	5	0	2	0	1	0	0	0	18	3	
1909	.....	0	0	0	0	0	1	0	0	0	1	0	1	1	5	0	5	1	1	0	0	0	0	0	14	2	
1910	.....	0	0	2	0	2	0	0	0	0	0	0	4	0	1	0	3	0	1	0	2	0	0	1	15	1	
1911	.....	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	4	0	0	0	1	0	2	0	12	0	
Total.....		1	0	3	1	4	0	4	0	0	0	4	1	6	1	10	1	17	1	4	0	4	0	2	1	59	6

CHRONOLOGY OF CASES.

The chronology of these cases is interesting. They all sprang up within an interval of ten days. The date of onset will next be given:

- January 9th, 1 case.
- January 14th, 2 cases.
- January 16th, 5 cases.
- January 20th, 1 case.
- January 21st, 1 case.

FAMILY INCIDENCE.

In the Catonsville typhoid fever outbreak, consisting of ten cases, five families are involved. The number of cases of sickness in each of these five families is as follows:

- Four cases in 1 family;
- Three cases in 1 family;
- One case in each of 3 families.

SANITARY INSPECTIONS.

Catonsville is a progressive Baltimore suburb, having a total population of 4,500. The number of persons in the five homes which I investigated aggregate 34. All of the patients are white persons, 2 males and 8 females. Three of the cases occurred in children, 1 in a boy of fourteen, 3 in young ladies and 3 in adult females. The ages of these ten persons will next be given in tabular form:

- 1 patient is 4 years of age;
- 1 patient is 7 years of age;
- 1 patient is 11 years of age;
- 1 patient is 14 years of age;
- 1 patient is 17 years of age;
- 2 patients are 18 years of age;
- 1 patient is 35 years of age;
- 1 patient is 37 years of age;
- 1 patient is 38 years of age.

In all of the cases the disease is believed to have been contracted in Catonsville. With regard to the drinking water supply of these patients, 7 used Baltimore county water and 3 used water obtained from a private spring. In the case of ice, this supply is artificial.

With regard to milk, the source of supply was private in 5 instances, and public in 5, the latter having been obtained from two dairymen.

Primrose's dairy, 1 patient;

Zaiser's dairy, 4 patients.

The ice-cream eaten by the patients was obtained from several places as follows:

George Heinmuller, 6 patients;

Heinmuller Brothers, 3 patients;

Different places, 1 patient.

The source of the raw food supply of these patients is not uniform. The raw food products, including lettuce, sprouts, tomatoes, celery, etc., have been derived from several sources. Some of them were home-grown, and others purchased from the market:

Purchased in market.....	5
Home-grown.....	3
Home-grown and market.....	1
Huckster.....	1

SEWAGE AND DRAINAGE.

Ample provision has been made in the homes of the patients for sewage and drainage. The Waring system of sewage disposal is the one commonly found. A few have cess-pits. In every instance the patients' discharges have been disinfected and thrown into the toilet.

ADDITIONAL MEASURES.

In addition to the foregoing, proper precautions have been taken to prevent the spread of the disease by contagion or contact. Competent nurses have been provided. In no instance does the person who waits on the patient handle food or drink which is to be consumed by other members of the family.

PREVIOUS ATTACKS.

Of the ten patients, only 1 had a previous attack of typhoid fever. This is a young lady of 18, who had an attack when she was a child, some 12 or 15 years ago.

In two of the five households, one or more members have had an attack of typhoid fever in time past. In one of these,

the household in which there are 4 cases, the father had an attack of typhoid fever ten years ago, and the governess two years ago. In another where there is 1 case of typhoid fever, a brother of the patient had an attack two years ago.

SPECIAL REMARKS.

The only features in common about these 10 typhoid fever patients is the fact that every one of them ate raw oysters on or about New Year's day. These oysters were purchased from Mr. Charles Poehlman of Catonsville. Mr. Poehlman goes around with a wagon and sells oysters and fish. He purchased his oysters from Wm. B. Martin, 119 Centre Market Place, Baltimore, who sells four or five barrels of oysters a day when the season is open. The oysters are shipped to Mr. Martin by L. M. Newcomb, of Old Point Comfort, Virginia. The oysters in question came out of about two barrels, one of which was purchased by Mr. Poehlman from Mr. Martin on the 26th of December, 1911, and the other on the 28th of December, 1911. They were a fine grade of salt-water oysters, known as Hampton Bar selects. On last Thanksgiving Day (November 30th, 1911), Mr. Poehlman served 35 or 36 dozen Hampton Bar selects on the half shell, and no one was made ill.

A barrel of Hampton Bar selects contains from 275 to 300 oysters. Some of these oysters are found to be "dry", and are not used. The number of oysters purchased by each of the five families involved, and the date of the purchase will be given in the following table (Table No. II). The families of two of the patients did not purchase any oysters themselves, but ate them at the home of one of the other patients.

TABLE NO. II.

NUMBER OF OYSTERS PURCHASED AND DATE OF PURCHASE.

<i>Name.</i>	<i>No. Purchased.</i>	<i>Date of Purchase.</i>
Mr. Cromwell.....	4 dozen.....	December 29, 1911.
Miss Wood.....	Ate raw oysters at Mr. Cromwell's..	December 29, 1911.
Mr. Lentz.....	9 dozen.....	December 31, 1911.
Mrs. Geiske.....	Ate raw oysters at Mr. Lentz's...	December 31, 1911.
Mr. Scarlett.....	13 dozen.....	January 1, 1912.

On or about New Year's day Mr. Poehlman served 30 families with loose oysters, that is, oysters that have been shucked. These oysters were eaten cooked and no case of sickness resulted therefrom. Subsequently four other families ate raw oysters taken from the two barrels believed to have been infected. The data are set forth in Table No. III:

TABLE NO. III.

FAMILIES WHO ALSO ATE RAW OYSTERS TAKEN FROM THE
TWO BARRELS, BELIEVED TO HAVE BEEN INFECTED,
AND WHO HAVE NOT DEVELOPED ANY ILLNESS.

<i>Name.</i>	<i>No. Purchased.</i>	<i>Date of Purchase.</i>
Aug. Poehlman.....	1 peck.....	January 4, 1912.
Mrs. Hubner.....	$\frac{1}{2}$ bushel.....	January 10, 1912.
Mrs. Willing Brown.....	2 dozen.....	January 11, 1912.
Mr. Swift Brown.....	2 dozen.....	January 11, 1912.

CONCLUSIONS.

The typhoid fever outbreak at Catonsville, Baltimore County, consisting of ten cases, was caused by the eating of raw oysters. All other causes—water, milk, ice, raw foods, contagion, etc.—have been excluded. Specimens of oysters have been examined by Dr. Stokes and found to contain colon bacilli, or evidences of sewage contamination. The original opinion, that only one barrel of oysters was infected, and that probably during transit, has been abandoned. The oysters which are believed to have caused the sickness came from at least two barrels. It would be a very difficult thing for a barrel of oysters to become infected during transportation. I am of opinion that the oysters were infected before being taken from the Virginia oyster beds.

Dr. E. G. Williams, health commissioner of Virginia, is investigating this matter at Old Point Comfort. Mr. Martin's place here in this city is also being scrutinized by Dr. Bosley. Mr. Martin's part in the transaction is very much like that of a commission merchant. Some of the oysters which he handles are sold to dealers directly from the wharf and are not even taken to his place of business at 119 Center Market Place. No one in Mr. Martin's employ has ever had typhoid fever.

Although a total of four persons in the five households involved had an attack of typhoid fever in time past, I believe the possibility of a typhoid carrier can be dismissed. As this is the first typhoid epidemic in Catonsville since the year 1898, and occurring as it has in mid-winter, it behooves us to look for some extraordinary cause. The occurrence of the disease in the families of the well-to-do, whose hygienic surroundings are of the best, and whose habits in regard to food and drink are excellent, is also suggestive of some unusual etiological factor.

Respectfully submitted,

C. W. G. ROHRER, M. D.,

Acting Chief, Bureau of Communicable Diseases.

SCARLET FEVER AT ROLAND PARK.

March 9, 1912.

Dr. John S. Fulton,
Secretary, State Board of Health,
Baltimore, Md.

Dear Dr. Fulton: I have the honor to report upon the investigation of an outbreak of scarlet fever at Roland Park, Baltimore County, made pursuant to your instruction, March 1, 1912. The first cases occurred in the previous December, and sporadic cases have continued to arise from that date down to the present time. In this inspection I was accompanied by Dr. James F. H. Gorsuch, health officer of Baltimore County. Valuable assistance was received from Dr. M. G. Porter and Mr. Arthur K. Taylor.

The scarlet fever situation at Roland Park had become chronically bad, and much anxiety was shown by the public at large. For these and other reasons the appended resume was prepared for the press, by Dr. Gorsuch and myself.

INVESTIGATION OF THE SCARLET FEVER SITUATION AT
ROLAND PARK, MARCH 1st, 1912.

Dr. James F. H. Gorsuch, health officer of Baltimore County, and Dr. C. W. G. Rohrer, acting chief of the Bureau of Communicable Diseases of the State Department of Health, visited Roland Park on March 1, 1912, for the purpose of making an investigation of the scarlet fever situation at that place. Assistance was afforded them by Dr. M. G. Porter, of Roland Park, and Mr. Arthur K. Taylor, president of the Patrons' Club of the Roland Park Public School.

After making a thorough investigation, records of about 25 cases of scarlet fever were obtained and investigated.

The disease is not essentially an epidemic, but a large number of cases exist in the northern portion of Roland Park and Tuxedo.

Most of these cases have been reported to the Baltimore County health authorities and to the office of the State Department of Health.

Some of these cases were mild and for a time the diagnosis was in doubt.

The cause of the origin of the disease is remote. So far no cause can be found to exist in the milk or water. The public school has already been closed, but has reopened as at this time there are no cases found to be in the school. Five of these cases have developed that attended school prior to the outbreak.

While the health officer of Baltimore County and Dr. Rohrer consider the disease under control and no immediate cause for alarm, they are insistent upon the necessity for absolute carefulness on the part of the householder to ward against the spread of the disease.

The physicians in charge of these cases are urged to isolate each patient under the care of a nurse or attendant, so that contact with other members of the family cannot occur.

The Board of Health of Baltimore County will use every means within its reach and feel that, by care, an epidemic will be averted.

A majority of the cases are confined to one neighborhood. In several instances two or more have occurred in one family. The half-dozen cases which have been recently reported are in homes already infected. The public school house has been fumigated and no child is allowed to return to school without a certificate from a physician.

There are many cases of tonsilitis in Roland Park at the present time and a great deal of the present alarm can be traced to this cause.

With proper isolation of the patients and those coming in contact with them, and proper disinfection, it is believed that no further spread of the disease will occur.

PUBLIC SCHOOLS.

Early in the course of the outbreak the public schools were closed, as directed by the local health officer. Fumigation of the school-rooms was done, and no pupil permitted to return without a physician's certificate. The schools remained closed for ten (10) days.

At the present writing the schools are in successful operation and in good shape. None of the recent cases are in school children. Much of the important work of issuing certificates to school children has been faithfully performed by Dr. Clarke.

LIST OF CASES.

The following twenty-five (25) cases of scarlet fever have occurred during the recent outbreak at Roland Park:

Nos. 1 and 2.—Two cases at Foster's, Harvest and Falls Road Terraces.

Nos. 3 and 4.—Two cases at Tyler's, 108 Longwood Road.

Nos. 5, 6 and 7.—Three cases at Stubbs, corner of Roland and Colorado Avenues.

No. 8.—Collard, Wilson St., Embla Park.

Nos. 9 and 10.—Two cases at Kyle's, 414 Forest Road.

Nos. 11, 12 and 13.—Three cases at Burch's, 417 Forest Road.

No. 14.—One case, child in home of Mr. Trott, 109 Beechdale Road.

No. 15.—One case, Marie Goodrich, 730 Euclid Ave.

- No. 16.—One case, Alfred McKay, 600 Gladstone Ave.
No. 17.—One case, Raymond Laws, 707 Roland Ave.
No. 18.—One case, Mary Grimes, 101 Longwood Ave.
No. 19.—One case, Minnie Crawford, 722 Wyndhurst Ave.
No. 20.—One case, in house of Guard, 407 Hawthorne Road.
Nos. 21 and 22.—Two cases, home of Hill, 207 Oakdale Road.
No. 23.—One case, Cole, 504 Winslow Ave.
Nos. 24 and 25.—Two more cases at Taylor's, Longwood Road.

ADDITIONAL NOTES.

The Stubbs cases, Cases Nos. 5, 6 and 7, were the first of all. These occurred in December, and were not reported, as the diagnosis was in doubt.

So many of these Roland Park cases of scarlet fever are in one neighborhood. Six of them were attended by Dr. Porter. Some of the cases were mild, and extremely difficult of diagnosis.

Three of the patients, Nos. 20, 21 and 22, were sent to the Sydenham Hospital by Dr. Clarke early in their illness.

WATER SUPPLY.

The Roland Park water supply is derived from artesian wells, and is of excellent quality. Drawn from streams many feet below the surface of the earth, it does not have to depend upon sedimentation and bacterial changes for purposes of purification, as is the case with drinking waters derived from shallow sources. Water is not considered to be a conveyer of the morbid matter in scarlet fever.

MILK SUPPLY.

The milk supply used in the scarlet fever homes is so variable it can be ruled out as an etiological factor. The following examples should suffice:

Crawfords: Maryland Central Dairy;
Dr. Grimes': Pikesville Dairy;
E. A. Laws: Maryland Central Dairy;
Kyle's: Schier's Hygeia Dairy;
Hill's: Pikesville Dairy.

The contagious element in scarlet fever, as well as in diphtheria, is not infrequently transmitted through the medium of milk. In the Roland Park scarlet fever outbreak, however, the milk supply can be eliminated as a possible causative factor.

CHRONOLOGY OF CASES.

The initial cases—those in the Stubbs family—occurred in December (1911). The Goodrich cases, January 3 (1912), were next in chronological sequence; then the Trott child, January 7. The Trott and Goodrich cases occurred in school-

children. On January 21, the McKay, Taylor and Foster cases developed; on January 25 the Laws case developed. The case in Dr. Grimes' family and the Crawford case developed the disease February 4.

The Laws, McKay, Taylor, Crawford, Trott and Goodrich cases all attend the same school. The Forest Road children are under school age.

MODES OF INFECTION.

In the Roland Park scarlet fever outbreak I believe there have been three modes of transmission of the disease:

1. Direct contagion or contact in the school-room, early in the history of the outbreak, before a definite diagnosis had been determined.

2. On the trolley-car; Dr. Grimes' little daughter, for example.

3. Lax methods of isolation and terminal disinfection, as many cases have been secondary ones occurring in families where the disease had already prevailed.

FOCI OF INFECTION.

These are three in number, as follows:

1. Upper part of Roland Park.
2. Tuxedo.
3. Embla Park. Herein there was but one case.

RECOMMENDATIONS AND CONCLUSIONS.

The outbreak of scarlet fever at Roland Park, Baltimore County, is believed to be under control. Only six new cases have been reported in the past two weeks. Dr. Porter has not had a case for four weeks. The new cases now are in the infected homes—secondary cases. The school teachers have rendered efficient aid in tracing up these cases.

Roland Park is the seat of numerous cases of tonsillitis, and a great deal of the present scare has been due to the incidence of cases of this disease. I was told that "Roland Park is full of tonsillitis".

Therefore, in view of the above statements, I desire to submit the following six recommendations and conclusions:

1. The Baltimore County Board of Health should pass an order providing for the placarding of homes in which contagious disease exists. So far as Roland Park is concerned, this order should be held under advisement, and subject to the discretion of the district health officer.

2. Better isolation of the patients would prevent a majority of the secondary cases.

3. Terminal disinfection should be done by the district health officer or his acting deputy, and not referred to the family physician or householder.

4. Milk bottles should not be collected from infected homes. The housewife should have ready a receptacle into which the dairyman can pour the milk or cream, without even touching it.

5. A prompt reporting of all cases, even suspected ones, to the district health officer.

6. Supposed "tonsilitis" cases should be watched carefully, so as to forestall the evil effects of a possible error of diagnosis.

Respectfully submitted,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

INVESTIGATION AT MOUNT RAINIER.

March 14, 1912.

Dr. John S. Fulton,

*Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Fulton: I have the honor to submit the following report of a sanitary investigation made in Mount Rainier, Prince George's County, on March 5, 1912. In this inspection I was accompanied by Dr. J. C. Ohlendorf, town health officer, who is a typical example of an overworked and underpaid public health official.

With the nine or ten exceptions noted in this report, the town of Mt. Rainier, incorporated in 1910, is in an excellent sanitary condition—thanks to the untiring efforts of Dr. Ohlendorf. Prior to presentation of the incorporation papers to the Maryland Legislature, then in session, I made a sanitary survey of the town on March 8, 1910. My report was submitted to you on the following day—March 9, 1910.

On March 5 I investigated the following nine (9) unsanitary conditions now existing in Mount Rainier:

1. Frank A. Pierce, Mount Rainier, Prince George's County. Pierce operates a dairy, and keeps 18 or 20 cows. Barnyard is unsanitary. Drainage from barnyard allowed to accumulate. Barnyard drainage, as well as surface water from Bunker Hill Road, which flows across Pierce's barnyard, runs through culvert under Rhode Island Avenue—Washington Electric Company's road, in rear of Thirty-seventh Street, Mount Rainier. Here its flow is sluggish and it becomes a nuisance, especially in hot, dry weather.

2. Toilet drainage from four (4) houses on Rhode Island Avenue. Said drainage issues from a 4-inch tile. It empties into a vacant lot on Thirty-seventh Street, thence across same, connecting with ditch noted in No. 1.

The occupants of the four houses referred to in this item are:

- a. T. E. Pfau, Rhode Island Ave., Mt. Rainier;
- b. C. F. Crane, Rhode Island Ave., Mt. Rainier;
- c. J. W. Gaver, Rhode Island Ave., Mt. Rainier;
- d. J. C. Staats, Rhode Island Ave., Mt. Rainier.

The sewer-pipe passes down from fourth house (J. C. Staats), inside of terrace and cement walk, crosses Thirty-seventh street and empties on vacant lot, as noted above.

3. Surface water from hills facing Thirty-seventh Street, between Newton Street and Rhode Island Avenue. Should be piped to gutter indicated in Nos. 1 and 2. This gutter runs down to B. and O. culvert, and empties into the Eastern Branch, D. C. For the want of a better name, I shall call it the "Thirty-seventh Street Drain."
4. Gutter on Thirty-seventh Street, near Newton Street. Pipe and drain into gutter noted above—that is, into the portion of it leading from Rhode Island Avenue car line to B. and O. culvert.
5. Toilet on Run—"Thirty-seventh Street Drain." Owned by Harry C. Turner, Thirty-seventh Street, Mount Rainier. Mr. Turner should rectify matters by putting in a water-tight box, to be cleaned at stated intervals.
6. A ten-inch drain-pipe in rear of houses on Newton Street, Thirty-sixth Street and Thirty-seventh Street, running across road underground. Conveys surface water and kitchen waste. Empties in Harry C. Turner's lot, flows across same, entering into "Thirty-seventh Street Drain." If this drain-pipe were extended across Turner's lot to the "Thirty-seventh Street Drain." it would obviate the difficulty.
7. Open drain or gutter running from west side of Newton Street, west of Electric Light Station. Connects with Rogers' open ditch at B. and O. culvert and flows through southern section of town. Has its origin at W. W. James' residence, Newton Street, Mount Rainier. Carries away surface water which stands in a large, stagnant pool on north side of Newton Street.

This low place or pool should be graded and filled in. The property itself is offered for sale by J. L. Kolb, 923 New York Avenue, Washington, D. C.

8. Gutter or open drain on Thirty-third Street—one pipe line on each side of street. Carries surface water. Passes under trolley line, through B. and O. culvert, to Newton Street drains. Rogers' pipe-line (see No. 9) adds to this trouble.
9. Messrs. James C. and J. Harris Rogers' pipe-line. From Twentieth Street, Bunker Hill Road, Thirtieth Street, Thirty-first Street, and Newton Street houses, a total of some 35 or 40 houses, as follows:
 - a. Newton Street.....14 houses.
 - b. Thirty-first Street.....12 or 15 houses.
 - c. Thirtieth Street.....6 houses.

The houses on Twenty-ninth street and Bunker Hill Road connect in an open ditch between Thirtieth and Thirty-first streets, and with above line at a point still higher up.

Rogers' pipe-line empties into an open ditch in the rear of the last four houses on Newton street. Ditch then runs in a southerly direction under electric car track in rear of houses on Thirty-fourth street, thence in a northeasterly direction under Thirty-fourth street culvert, thence through B. and O. culvert to Eastern Branch, in Bladensburg, as noted in a previous report.

MISCELLANEOUS.

Dr. Ohlendorf desires to know if Dr. Mikule, now practicing pharmacy in Mount Rainier, is a registered pharmacist. This question has been referred to Dr. Caspari, who is looking into the matter and will reply in due season.

The appended letter from Dr. Ohlendorf is interesting, and sets forth several complicated problems:

Mount Rainier, Md., March 8, 1912.

C. W. G. Rohrer, M. D.

Dear Doctor: I tried to inspect the residence on 30th St. today (I spoke to you about), but with no success. I was told in plain talk it was none of my d—— business how she kept her house. It is a shame and a disgrace the filthy way this woman runs around the roads, going to the public pump drawing water, and the overflow from her buckets running down said well again. I can say with safety that the home must be of the most unsanitary condition that any place could possibly be put in for this reason: when I went there today at 2 P. M. neither she nor the two children I could see from the doorway had been washed nor looked as if any water had been used for months, as the dirt was caked upon thin bodies—the back yard itself is sufficient evidence. The clothing black as pitch, possibly filled with vermin; she herself almost ready to go down with another. There is no ventilation nor sunlight entering the place; everything closed up tight. They have a child between 11 and 13 years of age, who has not seen the inside of school, which should be punishable by a heavy fine alone, that parents are allowed to bring a child up in such ignorance.

Dear Doctor, if it is possible to overcome this condition, either by causing the place to be put in a healthy and sanitary way, I wish it would be done, as I am very much afraid for the neighborhood this summer. I do not like to bother you so much, but I see that I have to have your assistance for all the advice in this case, as you have handled these cases before and know how and what to do.

Awaiting your reply, and thanking you in advance, I remain,

Very respectfully,

J. C. OHLENDORF.

RECOMMENDATIONS AND CONCLUSIONS

Under this caption the following opinions are expressed, concerning the abatement of the above unsanitary conditions in Mount Rainier:

1. Frank A. Pierce should be instructed to keep his dairy in as sanitary a condition as it is possible to keep it.

2. A covered cement drain should be made from the Rhode Island avenue trolley car-line certainly to the limits of the habitable portions of the town of Mount Rainier; in other words, the "Thirty-seventh Street Drain" should be made a covered, cemented drain, instead of an open, foul-smelling, stagnating gutter as it now is.

3. The sewer-pipe emptying on Harry C. Turner's lot should be extended so as to reach the proposed cemented "Thirty-seventh Street Drain" referred to in No. 2.

4. It would be quite an item, financially, to make a covered cement drain from the Rhode Island avenue trolley line to the Eastern Branch, D. C. But the drain should be built, or a large-size tile laid, certainly as far as the habitable limits of the town of Mount Rainier. Later on, if it becomes necessary, the covered cement drain could be extended.

5. Suggestions for remedying the other unsanitary conditions noted in this report are given along with the description.

6. The conditions noted in Dr. Ohlendorf's letter of the 8th instant should be referred to the social service committee, the improvement association, or the women's civic league, rather than to the health officer. At the present time it is not a public health question, but it would be difficult to say how soon it might become one.

7. I am indebted to Dr. Ohlendorf, health officer of Mount Rainier, for much assistance in the investigations recorded in this report.

Respectfully submitted,

C. W. G. ROHRER,
Acting Chief, Bureau of Communicable Diseases.

TYPHOID FEVER IN ELKTON.

April 29, 1912.

*Dr. John S. Fulton,**Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Fulton: I have the honor to submit herewith my report upon the typhoid fever situation in Elkton, Cecil County, made pursuant to your instructions on the 17th and the 18th inst. In this investigation I was accompanied and assisted by Dr. H. Arthur Mitchell, health officer of Cecil county.

CHRONOLOGY OF CASES.

To give a clearer insight into the Elkton typhoid situation, I shall make mention of the cases which have occurred since the first of the present year.

First I shall give the January series of cases, six (6) in number, as follows:

1. Hettie Pratt; complicated with pneumonia.
2. Helen Cawley, Dr. Cawley's daughter.
3. William Davis.
4. Miss Lydia Reynolds; complicated with pneumonia.
5. Mrs. Reuben Deibert; complicated with pneumonia.
6. Norman Cameron; complicated with pneumonia.

In the above series of six cases of typhoid fever I desire to call attention to three things: First, four of the six cases were complicated with pneumonia; second, I have no official report of either the Reynolds case or the Diebert case; and, third, the diagnosis in the case of the Cameron child was in doubt—was it pneumonia? or, was it typhoid complicated with pneumonia?

The first February case was an imported one, as follows: Mrs. Eva Chambers, aged 24 years. Date of onset, February 13, 1912.

The Chambers family moved from "Brookfield Farm," Conshohocken, Pennsylvania, to Elkton, on the 13th of February. Mrs. Chambers was ill at the time, other than such indisposition as would be produced by her impending confinement. From the family history which I elicited, she was already incubating typhoid fever. Her illness extended throughout March, in which month the disease was recognized; hence this is referred to again as one of the March cases of typhoid fever.

The remaining February cases present a striking instance of a house outbreak of typhoid fever, 4 cases in all. The occurrence of such an outbreak in mid-winter, the coldest ever known in Maryland, is also deserving of emphasis. The names of the patients, etc., are:

1. Walter Bryson, aged 29 years. Date of onset, February 28, 1912.
2. Willard Bryson, aged 7 years. Date of onset, February 28, 1912.
3. Alice Bryson, aged 6 years. Date of onset, February 28, 1912.
4. Sarah Bryson, aged 2 years. Date of onset, March 9, 1912.

PRESENT OUTBREAK.

The present typhoid outbreak, 13 cases in all, really begins with the February group. The January cases, six in number, apparently were due to another cause, to be described later.

The March group totals eight cases, counting Mrs. Chambers, whose case was reported in this month, as follows:

1. Austin Camblin, aged 8 years. Date of onset, March 3rd.
2. Joseph Gallo, aged 19 years. Date of onset, March 3rd.
3. Katharine Bunce, aged 7 years. Date of onset, March 10.
4. William B. Realey, aged 6 years. Date of onset, March 13.
5. Mrs. Eva Chambers. See preceding (February) paragraph.
6. Isaac Bruce, aged 5 years. Date of onset, March 16.
7. Charles Bryson, aged 35 years. Date of onset, March 17.
8. Dr. John Mackall, aged 25 years. Date of onset, March 17.

So far there has been but one case of typhoid fever reported in April. The onset of the disease, however, was in March.

Reuben Deibert, aged 24 years. Date of onset, March 30.

STATUS OF PATIENTS.

Of the 13 Elkton typhoid patients, in the present outbreak, 9 are males and 4 are females. All are white, 6 adults and 7 children. There were three fatalities, as follows:

- a. Sarah Bryson.
- b. Mrs. Eva Chambers.
- c. Dr. John Mackall.

The disease presents itself in two types or epidemic groups: a virulent type, imported, and a mild type endemic in Elkton. The former group comprises seven cases; the latter six. All of the deaths have occurred in the first group.

SEWAGE AND DRAINAGE.

The 13 patients cause an involvement of 10 Elkton homes. In 5 of these homes the drainage is bad; in 2, good; and in 3, fair. In 9 of the 10 homes there is a surface toilet.

WATER SUPPLY.

The water supply of the people of Elkton is principally derived from the public supply. There are also a number of private wells. In regard to the inmates of the ten homes in which typhoid fever exists, their source of drinking water supply is, as follows:

a. Derived from private wells.....	7
b. Public water supply.....	3

MILK SUPPLY.

There are but three dairies supplying milk to the people of Elkton. In addition there are several sources of private supply. The milk used by the 13 typhoid patients was obtained as follows:

George Ash, Holly Hall Dairy.....	1
Charles Bryson, Elk Landing Dairy.....	5
Bryson and Ash, some from each.....	1
Private milk supply.....	6
A. C. Jacquette, Pine Hill Dairy.....	0

RAW FOODS.

The raw food supply formerly used by the typhoid patients was also investigated, although it apparently had no bearing on the disease. The respective sources are so varied they are not given below, as it was decided that the raw foods have nothing to do with the outbreak.

DISPOSITION OF EXCRETA.

The manner of ultimate disposition of the typhoid discharges was noted carefully, with the following results:

- a. In four instances the discharges were disinfected and buried.
- b. In four instances the discharges were neither disinfected nor buried, but were thrown into a surface toilet in the raw state. It is alleged that an attempt at disinfecting these discharges was made during the first week of the disease.
- c. In two instances the typhoid discharges were disinfected and thrown into an indoor toilet, eventually reaching the Elkton sewer.
- d. In two instances the discharges were thrown into a surface toilet without having been disinfected, and the patients were removed early in the disease to the hospital.
- e. In one instance the discharges were disinfected and thrown into a surface toilet.

PREVIOUS ATTACKS.

In no instance had the patient had typhoid fever before. In six instances there had been no previous cases of typhoid in

the afflicted family. In each of seven instances there had been a previous case, or cases, as follows:

- a. Hired help, a young man, 19 years old, ten and a half months previously.
- b. Mother of patient, 11 years before.
- c. Mother of patient, 10 years before.
- d. Aunt of patient, 40 years previously.
- e. Four cases in family, 4 years previously.
- f. Mother of patient, when she (the mother) was young.
- g. Wife of patient, 3 months previously.

MISCELLANEOUS.

The spread of the disease by contagion has been fairly well guarded against, but in two instances the probability of contagion being a factor is very strong. These cases will be discussed fully in the sequence.

Boiling the water was rarely practiced in the afflicted families. In one instance it was stated that the drinking water used had been boiled for a period of a week; in another instance, after several members of the family had been stricken. In 5 instances no attempt had been made at all to boil the drinking water used by the family, while in 3 instances only boiled water had been used for drinking and culinary purposes.

In only two instances has a nurse been employed. In the other cases the patients were nursed by members of the family and by relatives, the mother acting as nurse in seven of them, all of whom were children. In eight instances the one nursing the sick handled food or drink to be consumed by other members of the family.

WATER ANALYSES.

I shall here give merely a concise summary, the complete account being available in the "Report of the Chemist," and the "Report of the Bacteriologist". The appended letter from Dr. Penniman answers this purpose admirably.

May 1, 1912.

*Dr. C. W. G. Rohrer, Acting Chief,
Bureau of Communicable Diseases,
State Department of Health,
Baltimore, Maryland.*

My Dear Doctor—Enclosed please find chemical and bacteriological examination of the samples of water obtained by you at Elkton, Maryland.

- No. 1, from the well of Charles Bryson.
- No. 2, from the well of Fred Camblin.
- No. 3, from the well of Walter Bryson.
- No. 4, from the well of Mr. Bunce.
- No. 5, from spigot in Felton House.
- No. 6, from the well at Pennsylvania Railroad Station.

Sample No. 1.—This water is contaminated. The contamination is largely removed by filtration, but this filtration process may break down at any time. The water is "bad."

Sample No. 2.—The chemical indications of contamination are very plain, but the filtration processes are still working so well that the Bacteriologist does not find any indications of contamination. As these filtration processes may break down at any time, the water should be classed as "bad."

Sample No. 3.—This water is contaminated, as indicated by the chemical and bacteriological findings.

Sample No. 4.—This water is contaminated, as indicated by the chemical and bacteriological findings.

Sample No. 5.—The chemical indications are that the contamination of this water is small in amount, but the bacteriological indications are that this contamination is in an active form. The supply is "bad."

Sample No. 6.—The chemical indications are that this sample is grossly contaminated, and the bacteriological examination shows that the filtration process has oxidized fecal matter, so that the water at the present time is free from harmful bacteria. This natural filter may break down at any time, and the water should be considered "bad."

Very truly yours,

W. B. D. PENNIMAN,
Chief, Bureau of Chemistry.

MILK ANALYSES.

Of the three samples of milk collected in Elkton, two have been declared good, both chemically and bacteriologically. These are:

George Ash, Holly Hall Dairy;
Charles Bryson, Elk Landing Dairy.

The other sample, marked Pine Hill Dairy, A. C. Jacquette, has been pronounced "good" chemically, and "suspicious" bacteriologically. The latter rating was made, because the presumptive test was positive for the colon bacillus.

RECOMMENDATIONS AND CONCLUSIONS.

The typhoid fever situation in Elkton, while not alarming as to point of numbers, has several perplexing features about it. Late summer and early autumn constitute the usual seasonal period for typhoid; but these Elkton cases have occurred in the winter and spring months. Typhoid usually attacks adults in the prime of life. But in the Elkton cases a fair proportion were children.

The January cases, I believe I have recorded six, should be set apart from the cases now under investigation. The January cases were mild, and at least three of them were complicated with pneumonia. There was considerable doubt expressed about a fourth case, that of the Cameron child. For the sake of safety it had better be classified as a case of typhoid fever, complicated with pneumonia, rather than as a case of frank pneumonia.

Two of the six January cases used milk obtained from a private source of supply (Mr. Cadmus Price). One used milk from A. C. Jacquette's dairy. All used town water. One had visited in Philadelphia shortly before the onset of the disease.

Dr. Mitchell, the health officer, is inclined to believe that the January cases were caused by eating raw oysters. The oysters in question had been floated, it is alleged, in water drawn from a well or spring known as Weaver's well, located at the bottom of a hill in a very suspicious locality.

Evidently there are two strains of typhoid bacilli in the February and March cases. One is virulent, the other but slightly so. The one April case has been set aside, and will be considered separately. This leaves twelve cases to be classified. Seven belong to the virulent type of infection, and five to the mild. Of the virulent cases, three have terminated fatally.

The first in the group of virulent cases was Mrs. Eva Chambers. From the best information which I could obtain, it is probable that she was incubating the disease when she left "Brookfield Farm," Conshohocken, Pennsylvania, and moved to Elkton. Her discharges were not disinfected, and were thrown into a surface toilet in close proximity to a surface well, the latter being but ten feet deep. By drinking water from this infected well, Walter Bryson and his three children became infected. Charles Bryson, the dairyman, helped to nurse the ill ones in his brother's family and contracted typhoid either by direct contagion or by drinking from the infected well. Dr. Mackall no doubt contracted the disease, in some unaccountable manner, by direct contagion from Mrs. Chambers, whom he was attending.

Of the series of five mild cases, these probably contracted typhoid by drinking water from surface wells, either at home or at a neighbor's. They represent the mild type of infection endemic in Elkton.

It was a comparatively easy matter for the above-mentioned surface wells to become infected. The gently rolling surface, the heavy winter and spring rains, and the insufficient protection from surface contamination, all conspire to bring about such untoward results.

In conclusion I desire to set forth the following recommendations and opinions:

1. In the series of severe cases the typhoid infection was imported. In the mild type of cases the causative agent is endemic in Elkton.

2. It is unsafe to drink water from a surface well in Elkton, without boiling same.

3. The public water supply is fair at the present time. But it is improperly filtered and receives much surface water whenever there is a shower of rain of any consequence. For this reason it would be unwise to ask for the abandonment of surface wells and the use of the town supply instead. But all suspicious water used for drinking and culinary purposes should be boiled, to prevent a further spread of the disease.

4. I could not attach any blame to the milk supply. The whole outbreak apparently hangs on the two causes—polluted surface wells and direct contagion. But the fact that dairyman Charles Bryson, who delivers milk to about 75 customers in all parts of Elkton, helped to nurse the typhoid patients in his brother's family and contracted the disease, should make us doubly watchful of the Elkton milk supply. He had been ill at home for ten days before he was taken to the hospital.

5. One of the hired help at Charles Bryson's dairy, John Conrad, had typhoid fever in June, 1911. Conrad helps to milk and drives one of the wagons. I have no reason to suspect such a thing, but it would be well to have Conrad's stool and urine examined bacteriologically, to determine with certainty that these are free from typhoid bacilli.

6. The same thing applies to Norman Cameron. The diagnosis of this boy's affection was in doubt, but it lay between typhoid fever and pneumonia, or probably typhoid complicated by pneumonia. He resided directly on the Elkton watershed. Early in the attack he was removed to the hospital.

An oversight in the diagnosis of the Cameron boy's case might precipitate a typhoid fever epidemic. Therefore, to be on the safe side I respectfully recommend that we consider him to have had typhoid fever, and that all possible precautions be taken to prevent infection of the Elkton public water supply. To feel secure, a bacteriological examination of his stool and of his urine should be made for the detection of typhoid bacilli, if these should chance to be still present. It would be well to make a Widal blood test, even at this late date, as this reaction may be present for months after recovery.

7. The well used by the late Mrs. Eva Chambers and the Brysons is highly polluted. To use water from this well, for drinking purposes, unless same has been boiled for 20 minutes, would be very dangerous.

8. The Weaver well, or spring, as it is merely a spring that has been walled up and a pump installed, should not be used

for floating or fattening oysters, certainly not unless it can be proven free from pollution.

9. The public water supply of Elkton is liable to be contaminated by surface toilets at Brewster's Mill and at Elk Mills. Boxes should be placed in these toilets and kept clean. Typhoid cases, or suspected typhoid cases, in the vicinity of either Brewster's Mill or Elk Mills should be reported promptly to the health officer, so that the necessary steps can be taken to prevent pollution of the Elkton public water supply.

10. The one April case (although the date of onset is given as March 30) of typhoid, that of Reuben Deibert, was undoubtedly due to direct contagion from his wife, at the time she was convalescent from the disease. Even at this late date it might be well to have her bowel and bladder discharges examined bacteriologically for typhoid bacilli.

11. Finally, I desire to thank Dr. Mitchell for his hearty co-operation in this work. I am also indebted to Dr. Bratton and Dr. Cawley.

Respectfully submitted,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

MEASLES IN CUMBERLAND.

April 26, 1912.

Dr. John S. Fulton,

*Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Fulton: I have the honor to report upon the investigation of an outbreak of measles in Cumberland, Allegany County, made pursuant to your instructions and in conjunction with Dr. Francis E. Harrington, health officer of the City of Cumberland. The work covered a period of two days—April 23rd and April 24th, 1912.

NUMBER OF CASES.

Down to, and including, April 24th, there have been 144 cases reported in the section of Cumberland lying south of Oldtown Road. This is the epidemic center. Other cases reported raise the total to 148.

It is an established fact that not all of the measles cases have been reported. Some are mild and the services of a physician not obtained; in other instances parents have forced

their children to enter homes where measles prevail, so that they may contract the disease now and "have it over with".

CHRONOLOGY, ETC.

I have procured the figures for three (3) months—February, March and April (down to and including April 24th), 1912. As has been stated above, the combined total is 148, distributed as follows:

February.....	2 cases.
March.....	25 cases.
April (down to and including the 24th).....	121 cases.

A rapid survey of these cases, arranged in tabular form, will next be given (Table No. I).

TABLE NO. I.

MEASLES IN CUMBERLAND, FEBRUARY, MARCH AND APRIL, 1912.

<i>Date Reported.</i>	<i>Male.</i>	<i>Female.</i>	<i>White.</i>	<i>Colored.</i>	<i>Total.</i>
February 14.....	1	..	1	..	1
February 21.....	..	1	1	..	1
March 2.....	..	1	1	..	1
" 4.....	1	..	1	..	1
" 7.....	..	1	1	..	1
" 11.....	..	1	1	..	1
" 18.....	1	..	1	..	1
" 20.....	1	..	1	..	1
" 25.....	..	1	1	..	1
" 26.....	2	3	5	..	5
" 27.....	3	..	3	..	3
" 28.....	3	3	6	..	6
" 30.....	1	3	4	..	4
April 4.....	4	2	6	..	6
" 6.....	3	1	4	..	4
" 8.....	5	1	6	..	6
" 9.....	3	..	3	..	3
" 10.....	2	2	4	..	4
" 11.....	2	1	3	..	3
" 12.....	1	..	1	..	1
" 13.....	4	6	10	..	10
" 15.....	8	2	10	..	10
" 17.....	3	2	5	..	5
" 18.....	7	4	11	..	11
" 19.....	3	5	8	..	8
" 20.....	5	9	14	..	14
" 22.....	12	10	22	..	22
" 23.....	3	2	5	..	5
" 24.....	5	4	9	..	9
Totals.....	83	65	148	..	148

I desire to state, by way of explanation, that in seven of the above instances the sex is not stated. In all of these the patients have been classified as males.

The ages of the patients will next be given (Table No. II).

TABLE NO. II.

SHOWING AGES OF MEASLES CASES, CUMBERLAND EPIDEMIC,
FEBRUARY, MARCH AND APRIL, 1912.

<i>Age of Patient or Patients.</i>	<i>Number of Cases.</i>
5 months.....	1
6 months.....	1
11 months.....	1
1 year.....	1
13 months.....	1
15 months.....	1
17 months.....	1
1½ years.....	2
22 months.....	1
2 years.....	9
2½ years.....	1
3 years.....	14
4 years.....	12
5 years.....	13
6 years.....	23
7 years.....	17
8 years.....	14
9 years.....	5
10 years.....	5
11 years.....	4
12 years.....	1
13 years.....	2
14 years.....	2
16 years.....	1
18 years.....	1
19 years.....	1
20 years.....	1
21 years.....	1
22 years.....	3
25 years.....	1
26 years.....	1
31 years.....	1
50 years.....	1
Ages not stated.....	4
Total.....	148 cases.

The age incidence, portrayed above, is interesting. It shows that the youngest reported case is that of a white infant, sex not stated, aged 5 months; the oldest, a white male aged 50 years. In the entire series of 148 cases there were six patients over 21 years of age, and four whose ages range from 16 to 20 years. The largest number of cases (103) have occurred between the ages of 3 and 10 years, including both. At the age of 6 years there were 23 cases, the largest number at any one age period. In four instances the age has not been given.

REPORT OF THE
PUBLIC SCHOOLS.

The following four (4) schools were promptly and judiciously closed by Dr. Harrington, health officer of the City of Cumberland.

1. St. Mary's Catholic School.
2. Pennsylvania Avenue School.
3. Virginia Avenue School.
4. Humbird School, located beyond city limits.

A copy of the order closing the schools, etc., is hereunto attached:

DEPARTMENT OF HEALTH, CUMBERLAND, MD.—NOTICE.

Public attention is called to the prevalence of measles in the Southern section of the city, and persons are warned of the dangers attending this disease. One death has already resulted, and among the number now sick are four adults. The law requires parents or guardians to report to the Health Officer all children suffering from measles, unattended by a physician.

For the purpose of preventing a further spread of this disease, it is hereby ordered that:

All schools, public and private, and all Sunday Schools in the Southern section of Cumberland, on and below Oldtown Road, shall be closed for one (1) week.

All children suffering from measles are not allowed on streets or alleys until completely recovered.

No child, accompanied or unaccompanied, 14 years of age or younger, shall be permitted to attend any moving picture show or other similar entertainment until further notice.

By order of the Board of Health,

FRANCIS E. HARRINGTON, M. D.,

April 12, 1912.

Health Officer.

STATUS OF SCHOOLS.

For purposes of comparison, I have collected data pertaining to six of the Cumberland schools—the four that were closed and two additional ones.

1. St. Mary's Catholic School. It is a private school, and the only one north of Oldtown Road that was closed. It has a total enrollment of 325 pupils. There are about 50 cases of measles in this school, causing the absentees to number 75 or 100. The approximate number absent from each room, largely but not wholly on account of measles, will next be given:

First room.....	36 pupils absent.
Second room.....	30 pupils absent.
Third room.....	8 pupils absent.
Fourth room.....	18 pupils absent.
Fifth room.....	1 pupil absent.
Sixth room.....	4 pupils absent.

It should be noted that the largest number of pupils are absent from rooms containing the youngest pupils. In the higher grades—rooms designated Fifth and Sixth—but very few pupils are absent.

2. Pennsylvania Avenue School. From this school there were 35 pupils absent on account of measles, and 20 additional absentees from unknown causes.
3. Virginia Avenue School. This school and the Pennsylvania Avenue School are under the excellent direction of Professor Tipton. Their total enrollment for the year is 832.

Miss Houser, at the Virginia Avenue School, informed us (Dr. Harrington and myself) that there were 52 pupils absent from the room taught by her. There are 79 pupils enrolled in Miss Houser's room, and 22 of the 52 absentees are out of school on account of measles.

4. Humbird School, a small school containing 7 rooms. It is outside of the corporate limits of Cumberland, and there are known to be at least two cases of measles among its pupils.
5. Union Street School. Last term there were 614 pupils registered. At the present time there are 575 children enrolled, with an average attendance of 521. In this school there are 17 cases of measles, with 12 additional pupils absent because measles exists in their respective families. The boy, Walter Valentine, who developed the disease about Easter, was the main source of contagion in this school. I have no official record of the Valentine case.
6. Maryland Avenue School. This school contains 209 pupils. In it there is one case of measles—Esther Hager. Like the Valentine boy, I find no official report of this case.

ADDITIONAL REGULATIONS.

I heartily concur in the following additional regulations issued by Dr. Harrington. As the principal means of dissemination appears to be through the medium of the public schools, their early and rigid enforcement became imperative. The moving picture establishments, mentioned in the previous order, were also avenues of infection.

CUMBERLAND, Md., April 20, 1912.

The following information and regulations are hereby promulgated for the information of all concerned:

Dr. C. W. G. Rohrer, Chief of the Bureau of Communicable Diseases, State Department of Health, has been detailed to co-operate with the Health Officer of Cumberland in combating the further spread of Measles.

Until the arrival of Dr. Rohrer, the following regulations issued under authority of the Charter of the City of Cumberland, will be observed, to take effect at once:

1. No child shall be readmitted to any school until after the Principal of said school is satisfied that the child has not been suffering from Measles, or in the event of having had or been exposed to Measles, can comply with Paragraph 2 or 3.

2. No child who has been suffering from Measles shall be permitted to return to school except upon a certificate from a regular practicing physician, stating that the child has recovered from said disease and giving the date of the last appearance of desquamation; such child to be readmitted not sooner than 7 days after the date in the certificate, as above mentioned.
3. No child who has been exposed to the infection of Measles or living in a house where there is a patient suffering from Measles, shall be permitted to return to school sooner than 14 days after the last exposure to the disease, or 14 days after the complete recovery of the patient in said house, as above mentioned.

FRANCIS E. HARRINGTON, M. D.,
Health Officer.

HOSPITAL ORDER.

To avert further possibilities of conveying measles from place to place, the following order was issued:

CUMBERLAND, MD., April 23, 1912.

*Superintendents of the Western Maryland
and Allegany Hospitals.*

Until further notice, children under 15 years of age shall be excluded from hospitals as visitors. Respectfully,

FRANCIS E. HARRINGTON, M. D.,
Health Officer.

RECOMMENDATIONS AND CONCLUSIONS.

Have thoroughly investigated, in conjunction with Dr. Harrington, the measles situated in the City of Cumberland, I respectfully submit the following conclusions:

1. A widespread epidemic of measles exists in the southern section of Cumberland. Not all of these cases have been reported. I wish to emphasize the point that every case of measles, whether mild or severe, is required by law to be reported. When there is a physician in attendance, he is the responsible party; otherwise the householder is responsible and subject to a fine, if he fails to report immediately to the health officer.

2. I heartily commend the steps taken by Dr. Harrington, the efficient health officer of Cumberland, in his efforts to control the epidemic. The closing of the schools in the infected area for a period of one week has enabled them to re-open with a clean bill of health.

3. The exclusion of children from moving picture parlors is a very important measure in combating the present epidemic of measles. I respectfully recommend that this order should be enforced during the remainder of this week, and even longer is necessary.

4. Negligence in regard to isolation of measles patients is the principal factor in the spread of the disease. Both physicians and parents are to be blamed; the former for failure to request isolation, and the latter for waiting until serious complications arise before calling in a physician. A number of cases of pneumonia have followed in the wake of this epidemic, with at least one death resulting.

5. The School Commissioners deserve great credit for their hearty co-operation in suppressing the epidemic. I am especially indebted to Superintendent Willison and Professor Tip-ton. The authorities at St. Mary's Catholic School have been equally vigilant and helpful.

6. Steps should be taken to have every case of measles in Cumberland promptly reported, either by the physician or the householder. The people should be impressed with the fact that measles is not such a simple thing after all, and that 45 deaths resulted from this disease in the counties of Maryland in the year 1911.

7. Isolation of patients in the home should be made imperative. Upon it depends the fate of the present outbreak. Physicians should instruct their families upon this point, and the public press can also be of untold service in disseminating such knowledge.

8. It seems that but two or three of the 34 physicians in Cumberland have been taking any steps whatever to properly isolate persons suffering from measles. Dr. Harrington and myself visited eight homes in which measles existed; in only two of the eight had steps towards isolation been taken. In one of the homes there were 5 cases; in another, 4 cases; and in two homes there were 3 cases each.

9. As 12 days has been found to be the usual period of incubation in the Cumberland epidemic of measles, it will be at least two weeks before the good results of our investigation will become apparent. It would be well to make the regulations now in force with regard to measles apply to all infectious diseases.

10. In conclusion I desire to thank Dr. Harrington for skilled assistance during this investigation. The Cumberland Board of Health, under the direction of Dr. Harrington, has become a model of its kind. The cities of Hagerstown and Frederick could, with advantage, copy Cumberland's example. Dr. Harrington's work as health officer, as well as Mr. Willi-

son's work as superintendent of schools, has produced results highly beneficial to the entire county of Allegany.

Respectfully submitted,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

USE OF NIGHT-SOIL IN THE VICINITY OF FORT HOWARD.

May 24, 1912.

Dr. William Royal Stokes,

*Acting Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Stokes: I have the honor to report upon an investigation concerning the use of night-soil in the vicinity of Fort Howard (North Point Road and Fifth Avenue), made pursuant to your instructions on the 21st inst. Complaints had been lodged by Colonel Barrett, Major Hutton and other officers stationed at the fort. Nor is this the first occasion on which the insanitary condition of affairs in the environs of Fort Howard has been brought to the notice of the State Board of Health. The subject came up very prominently in the autumn of 1908. At that time Colonel Rafferty was in charge of the post, and I made the inspection on October 19, 1908, accompanied by Captain Morse of the Medical corps.

In 1908 complaints had been made of five cesspools, as follows:

- No. 1. Cesspool (or cess pit) on the Todd estate, Fort Howard. Approximate dimensions: 70 x 40 x 3 feet. T. B. Todd, Sparrows Point, Station K, Route 10.
- No. 2. Owned by E. H. Stansbury, Sparrows Point, Station K, Route 10. Nearly empty: covered with a green scum. Dimensions: 100 x 40 x 4 feet.

From the side of this pit a long, wooden spout juts forth. Box wagons are backed up to it and the "night-soil" permitted to run into them. At periodical intervals the contents of this pit or pool, as well as of the other four, are stirred up by a man on horseback or muleback. At the same landing, garden truck, tomatoes, etc., are loaded on scows and sailing vessels.

The cesspools are about 30 feet from the shore (water's edge), and about 40 yards from the landing. When the inspection was made (October 19, 1908), there were 40 crates of tomatoes at the landing, about 20 feet from the initial end of the trough or spout.

- No. 3. Owned by John W. Henson, Sparrows Point, Station K, Route 10. Empty cesspool, measuring 70 x 40 feet. Small leak at loading place—that is, on side where box or barrel wagons are loaded. About this cesspool there is quite an accumulation of old rags and other refuse.
- No. 4. Located by the side of No. 3, also empty. Owner or operator, Mr. Turner, care of Lodge Farm, Sparrows Point, Station K, Route 10. Has two outlets or loading places; also a dock adjacent, on which there is no produce at the present time. Dimensions as above—70 x 40 feet.
- No. 4 is farther north than No. 3, both being on the west side of North Point Creek. Nos. 1 and 2 are on the east side of the creek, No. 2 being north of No. 1.
- No. 5. Owner, T. B. Todd, Sparrows Point, Station K, Route 10. Dimensions: 80 x 60 feet, and from 4 to 5 feet deep when full. Now contains "night soil" to a depth of $1\frac{1}{2}$ feet. This cess-pit is nearest of all to the Fort Howard post, being about a mile (5,000 feet) distant. Its exact location is on the east side, and close to the mouth, of North Point Creek, an inlet or tributary of the Patapsco River. All five of these cesspools or pits are within $1\frac{1}{4}$ miles of the Fort Howard post, in an air line.

PRESENT CONDITION.

The officers at the Fort Howard post have recently filed complaints analogous to those of previous years, beginning with 1908. A mass of correspondence appertaining thereto, which had accumulated in the meantime, has also been submitted.

The Fort Howard officers allege that certain farmers and planters in the vicinity of Fort Howard are maintaining insanitary nuisances, in violation of the order issued by the State Board of Health, in reference to the use of "night-soil" as a fertilizer, "night-soil" being the provincial name for human excrement. The following is a copy of these regulations:

REGULATIONS GOVERNING THE USE OF NIGHT SOIL FOR FERTILIZING GROWING VEGETABLES.

The following regulations are hereby promulgated regarding the use of night soil for fertilizing growing vegetables:

1st. The use of night soil for growing vegetables will be allowed when the night soil is mixed with at least an equal volume of lime, earth, or other inert material, and covered with at least two (2) inches of earth.

2nd. The sprinkling of growing vegetables with night soil or the bringing of such vegetables directly into contact with night soil in any other manner is forbidden.

3rd. Vegetables grown in violation of these regulations are hereby declared diseased, unsound and unwholesome, and all such vegetables and crops will be condemned and destroyed by an inspector of the Board in accordance with the provisions of Section 129 of Article 43 of the Code of Public General Laws, and whosoever shall sell such vege-

tables or crops in violation of the orders and regulations of the Board shall be subject to the penalties provided by the said Section 129 of Article 43.

By Order of the Board,

MARSHALL LANGTON PRICE, M.D.,

Secretary.

The new charge, while not so comprehensive as those of former years, are quite similar, as follows:

1. The maintaining of three (3) cesspools or cess-pits in which "night soil" is stored.
2. The use of raw night soil on growing crops and growing vegetables.

The three (3) cesspits, according to measurements which Colonel Barrett, Major Hutton and myself made at the fort, are one mile distant. These conditions are alleged to be insanitary and classed as nuisances prejudicial to health, because:

1. An intolerable stench arises therefrom;
2. The presence and breeding of flies are encouraged.

Two of the three condemned cesspits are owned by Elmer H. Stansbury, whose address is given above as Sparrows Point. The third is owned by Mr. T. B. Todd, Jr., whose address is Fort Howard. Mr. Todd's cesspit is nearer the fort than Mr. Stansbury's two, the latter being located side by side near the Bay Shore earline.

The "night-soil" is brought from Baltimore City, in barges, about April 1 to 10, principally by the Turner Company. It is brought to the chute, and pumped into the pits.

RESULT OF INSPECTION.

I found the two cesspits owned by Mr. Stansbury to be in a half-filled condition; the one owned by Mr. Todd was completely filled. At the time of my inspection (Tuesday afternoon, May 21, 1912) very little odor was arising from any of these cesspits, certainly not enough to be branded an insanitary nuisance. I passed Mr. Stansbury's twice on the car, going and coming, and did not know it, nor did I observe any discomfort on the part of my fellow-passengers, a number of whom were ladies.

For half an hour I endeavored to find house flies or their larvæ in or about Mr. Stansbury's cesspits, but I was unsuccessful in my search. I spent fully fifteen minutes on a similar mission at Mr. Todd's cesspit, also of no avail. I found numerous rat-tailed maggots, which are larvæ of the syrphus or drone fly. So far as I am aware, this dipterous insect is not guilty of transmitting contagious disease. It resembles

a bee, and can be seen hovering about flowers, mint, etc. Some of these rat-tailed maggots were quite large, the sturdiest I have ever seen. I also observed a few blue-bottle flies hovering over the night-soil contained in the pits. I did not observe a single mosquito, but it was perhaps too early in the evening.

CONCLUSIONS AND REMARKS.

As the conditions found were not as unsatisfactory as I had anticipated, my recommendations and conclusions will be tolerably brief. I, therefore, record the following summary:

1. Night-soil as a fertilizer, in its raw state, has been used by Messrs. Stansbury and Todd on young clover and on Indian corn. I am of opinion that such a step is not contrary to the Night-Soil Regulations as promulgated by the State Board of Health, which ruling applies to growing vegetables to be consumed by human beings, chiefly uncooked.

2. The above is recorded on the statement of Messrs. Todd and Stansbury themselves, as no evidence at all remains of such a thing having been done. However, the flourishing crop of young grass is highly suggestive.

3. Mr. Stansbury and Messrs. Todd, father and son, all declare they are using night-soil in harmony with the regulations, and I certainly can furnish no data to the contrary, at the present writing.

4. As no house flies were observed, nor their larvæ, the danger accruing from these insects breeding in the three cesspits under observation must be very slight indeed. The distance from the fort, about a mile, is also another deterrent factor. Even should house flies breed in these cesspits later in the summer, comparatively few if any of them would reach Fort Howard; because it has been proven that a house fly rarely travels more than two or three hundred yards from the place of its birth.

5. Finally, if my memory serves me rightly, there are papers on file in the offices of the State Board of Health, to the effect that the afore-mentioned cesspits were inspected at an earlier date by Dr. Price, Dr. Gorsuch, Judge Duncan *et al.* and could not be condemned as insanitary in themselves.

Respectfully submitted,

C. W. G. ROHRER

Acting Chief, Bureau of Communicable Diseases.

INSPECTION OF GARRETT HEIGHTS' SCHOOL
GROUNDS.

BALTIMORE, MD., July 2, 1912.

*Dr. John S. Fulton,**Secretary, State Board of Health,
Baltimore, Md.*

Dear Sir: I have the honor to report upon the inspection of the Garrett Heights' School grounds, Lauraville and Hamilton, Baltimore County, made pursuant to your instructions on Saturday afternoon, June 22, 1912. Dr. R. C. Massenburg, district health officer, was unable to accompany me on this tour of inspection.

The special request for this inspection came from Mr. J. H. Mitchell, president of the board of trustees of the school. Its prime object has to do with the toilet accommodations, which have been declared inadequate and insanitary.

GENERAL STATEMENT.

The Garrett Heights' School is located 350 feet above tide-water. The school-building is a spacious brick structure, two stories high, well lighted and well ventilated. The school grounds comprise two acres. Numerous forest trees still standing—oak, chestnut, hickory, etc.—by their grateful shade add to the comfort of the place.

This school is the second largest in Baltimore County. Nearly 600 pupils were in attendance during the sessions of 1911-1912, and an influx of about 100 more is expected at the opening of the fall term in September.

BOYS' TOILET ACCOMMODATIONS.

I first inspected the conveniences provided for the boys in attendance upon this school. I found the toilet to be a small frame building well whitewashed, within and without, and located twenty yards from the school-house. Being provided with a shallow, cement pit, it is what we term an earth, or a pit-closet. Lime has been thrown therein, thus indicating that reasonable efforts are taken to keep it clean and hygienic. As it is well nigh impossible to thoroughly mix the lime and faecal matter, portions of the contents of the pit contain fly larvæ. A marked odor pervades the place, and vitiates the atmosphere for a distance of 30 or 40 yards, according to the direction of the prevailing winds.

The door of the boys' toilet is kept habitually open, and the building itself, as well as the cement pit, is invaded by numer-

ous house flies. Flies breed in the pit, although it is provided with a stout lid. There are four seats in this toilet, which are kept reasonably clean; but the openings are not provided with lids. The pit contains much faecal matter. The urinal extends along the east and south sides of the building. It is seven feet in length, and zinc lined.

GIRLS' TOILET ACCOMMODATIONS.

On the girls' side I found two outhouses—an upper and a lower one. The latter consists of a double frame building located fifteen yards from the school-house. There are four seats in each part, none of which are provided with lids or covers. The seats are kept fairly clean, with the exception of considerable dust which has collected thereupon. The door to each part was closed. The pit contains but little faecal matter, and that little has been limed. There were but few flies and but little odor.

The upper of the two girls' toilets is not so favored by fortune as the lower one, from which it is distant about five yards. It is also a whitewashed, frame structure. It contains four seats, reasonably clean, but not provided with lids or covers. I found the door open. The pit contains much faecal matter. The odor is foul, and flies abound.

CONCLUSIONS AND REMARKS.

Enough has certainly been said to convince the most skeptical that the toilet accommodations at the Garrett Heights' School are inadequate and insanitary. It is exasperating to think that a modern school of nearly 500 pupils is provided with toilet accommodations of such diminutive proportions.

Each of these toilets has a shallow, cement pit provided with a stout cover or lid. All have been whitewashed. None of the seats have lids or covers.

I respectfully recommend the following:

1. That a sanitary toilet be installed in the basement of the Garrett Heights' School, of sufficient magnitude to accommodate its 500 or 600 pupils. Our boys and girls are justly entitled to such a necessity and convenience, even though it should cost Baltimore County some \$1,200 or \$1,500. This is a small expenditure, compared with the increased comfort and physical well-being which would result.

2. I have been informed that some of the smaller school children do not attend properly to the calls of nature, because the toilet accommodations are inadequate. Then, too, the discomfort of using an outdoor toilet in cold and rainy weather

is another desideratum. Who, for example, would have cared to resort to an outside, open toilet in such weather as we had during the winter of 1911-1912, when the thermometer registered from ten to twelve degrees below zero?

3. In conclusion, I desire to repeat: The toilet accommodations at the Garrett Heights' public school, Lauraville and Hamilton, are both inadequate and insanitary. A sanitary toilet installed in the basement of the school building is urgently needed and earnestly recommended. Much ill-health in the smaller school children especially could be thus averted; and many cases of coughs, colds, pneumonia and intractable bronchitis would be prevented. In brief, the lives, health and comfort of some 600 school children would be fostered.

Respectfully submitted,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

TYPHOID FEVER IN CAMBRIDGE.

BALTIMORE, MD., August 22, 1912.

Dr. John S. Fulton,

*Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Fulton: I have the honor to make the following report upon the investigation of the typhoid fever outbreak in Cambridge, Dorchester County. The investigation consisted of two parts: First, an inspection of the yacht "Texas", plying between Cambridge and Annapolis, made pursuant to your instructions on July 30; secondly, an investigation in the City of Cambridge and vicinity, made pursuant to your instructions, on the 2nd and 3rd of the present month.

I shall first append a copy of the letters setting forth the "why and wherefore" of these inspections, to be followed by the individual reports later on.

REASONS FOR INSPECTIONS.

The following letter from Dr. E. E. Wolff, health officer of Cambridge, contains the first inkling which we had of the trouble.

July 31, 1912.

Dear Doctor Price—The names of the parties to whom I referred yesterday in my talk with you regarding the steamer "Texas," which plies between here and Annapolis are John Byrd, captain, who lives on Patterson Park Ave. just opposite the Park; J. Saunders, purser, in

Cambridge (Md.) Hospital; Amos Creighton, mate, at home in Cambridge; Ivy Nelson, in Cambridge boarding house, son of the engineer of the "Texas," and who made frequent trips with his father. The outside parties referred to were Eugene De Reves, private secretary to the Governor, and several others. None of these cases has been positively demonstrated to be typhoid, but they are very suspicious. The boat people claim the trouble to have come from the use of ice which they purchased regularly in Annapolis.

Do your best to look after the Annapolis end for me. I think the Gov. will appreciate it, as he has been travelling on the "Texas" himself and is a little frightened. If I can learn anything further, will write you. Let me hear the result of your investigation.

Fraternally yours.

E. E. WOLFF, C. H. O.

I was accompanied by Dr. Hopkins, the health officer of Anne Arundel County, in my inspection of the yacht "Texas", on July 30. On the following day the appended letter pertaining to the situation, was received from him.

July 31, 1912.

Dear Dr. Rohrer—Mr. Palmer, of the steamer that you inspected yesterday, informed me over the phone this afternoon that the Health Officer in Cambridge told them last night that there were about 40 cases of Typhoid Fever in Cambridge and vicinity. He asked me to let you know and he seems to think it is due to the milk supply which they obtain in Cambridge.

Very truly yours.

WALTON H. HOPKINS,

Health Officer of A. A. Co.

Immediately upon my return from inspecting the "Texas", I prepared and submitted to you the following summary of the conditions noted:

July 31, 1912.

Dear Dr. Price—On yesterday afternoon I inspected the yacht "Texas," plying between Annapolis and Cambridge, among whose crew of ten men three cases suspicious of typhoid fever have developed.

I found the vessel in good, sanitary condition; but ascertained that the cook had had typhoid fever twenty-two years ago, making it look suspicious of the latter possibly being a typhoid carrier.

Mr. E. P. Palmer, general manager, informed me that the crew of the "Texas" had gotten thoroughly drenched on Wednesday, the 24th, and that the mate's illness began the next day. Should these three cases—captain, purser and mate—prove to be typhoid, and not simply fever, bronchitis and muscular pains due to getting wet while overheated, the milk supply, procured in Cambridge, should be investigated.

Very respectfully.

C. W. G. ROHRER,

Acting Chief Bureau of Communicable Diseases.

DETAILS OF INSPECTION.

I went over the "Texas" pretty thoroughly, in my inspection on the 30th ult., and found conditions pretty good, as stated above in my preliminary summary. Mr. A. R. Henry is purser

on board the *Texas*, and Amos Creighton, one of the ill persons, is mate. The yacht purchases its commissary stores in both places—Annapolis and Cambridge, but principally in Cambridge. Sometimes crabs are bought in Annapolis.

The water supply used on board the yacht is obtained in Cambridge; likewise the milk supply.

At the time of my inspection I noted that the toilets are not flushed properly. I also observed that only port-holes are provided for ventilation of the lower deck, which are scarcely adequate.

The berth deck, the kitchen and the crew's toilet, all in the forward part of the boat, are in good condition. After the berth deck come the cabin and the officers' rooms, also clean and sanitary. The dining-room and serving room, are on the main deck, and in good shape. The passenger's toilet, located on the main deck, is in good condition, as are the after-berth deck cabin, the upper deck, and the engineer's sleeping-room. The three sick men slept in the after-berth deck cabin.

PREVIOUS ILLNESSES.

Two of the ten men making up the crew of the "*Texas*" have been ill in days gone by. The cook, John H. Cole, of Cambridge, had an attack of typhoid fever twenty-two years ago. He was ill in Cambridge, the disease lasting nine weeks.

The engineer, August Nilson, had what he calls malaria fever, in the Dutch East Indies, nineteen years ago. He states that he never has had typhoid fever.

Cole has only been employed on the "*Texas*" for about five weeks. Another colored man employed on board the yacht, George B. Lowry, from Annapolis, has never been ill. He waits on the table. Cole has been employed at a number of places within the last twenty-two years, but no one whom he has served has ever contracted typhoid fever, to his knowledge. For instance, he was employed at the Hotel Dixon, Cambridge, for seventeen years; and at the White House Lunch-room, Cambridge, for four years.

HISTORY OF PRESENT TROUBLE.

On Wednesday of last week, July 24, all three of the persons now ill got thoroughly drenched, Sandin and Creighton in Cambridge, and Captain Bird in Baltimore. The mate, Amos Creighton, was taken ill on the next day, Thursday, July 25; E. Sandin, the purser and steward, on Sunday, the 28th of July; and the captain, John Bird, on the following day, Monday, the 29th of July. The illness of the mate has been diag-

nosed typhoid fever. One of the ill persons, the captain, is in Baltimore; the other two are in Cambridge.

MISCELLANEOUS.

The boat line from Annapolis to Cambridge is operated by the Eastern Shore Development Steamship Company, with E. P. Palmer as general manager. This company also runs a boat, the "Atlantic", from Annapolis to Claiborne. No one is ill on the latter boat, thus making the facts point suspiciously to Cambridge as the source of the infection.

The crew of the "Texas" spend most of their time in Cambridge, where their food products, including milk, are purchased. Ice is purchased in Annapolis.

The crew of the "Texas" was organized in the middle of April, but the boat has been only running since May 4. Of the ten men making up the crew, three are ill.

SITUATION IN CAMBRIDGE.

Pursuant to your instructions I visited Cambridge on the 2nd and 3rd of the present month. The conditions which I found at that time are summarized in the following preliminary report.

August 5, 1912.

Dear Dr. Price—I found about twenty cases of typhoid fever in Cambridge. With but one or two exceptions all were traceable to the milk supply obtained from one dairy. The yacht "Texas" was also supplied with milk from said dairy.

Mr. George B. Taylor is the proprietor of the infected dairy. It is known as "Horn's Point Dairy." There is a case of typhoid fever—that of Brice G. Peters, a grandson—on Mr. Taylor's dairy farm at the present time. Three or four weeks ago there was another suspicious case, the first, that of one of the hired help, a young white man, aged 22 years, George Quillen by name. Quillen's illness was rather indefinite, but from what I have learned about it I do not hesitate to pronounce it a mild attack of typhoid fever.

Quillen's case of unrecognized typhoid fever was the starting point of the present outbreak in Cambridge. Mr. Taylor's milk supply was stopped on Saturday afternoon, 3rd instant, when Dr. Carroll, acting upon my instructions, had served on him the following notice:

Cambridge, Maryland, August 3, 1912.

Mr. George B. Taylor, Proprietor,
"Horn's Point Dairy,"
Cambridge, Maryland.

Dear Sir—Owing to the prevalence of an infectious disease, to wit, *typhoid fever*, on your dairy farm, you are hereby forbidden to sell or offer for sale for human food any milk, cream, or other dairy products produced on said farm.

This order is to go into effect immediately, and to remain in effect until its revocation by the health officer.

VICTOR CARROLL, M. D.,
Health Officer of Dorchester County.

While the investigation was in progress I advised the boiling or pasteurizing of all milk used in Cambridge.

I urged Mr Taylor to have his grandson sent to the hospital, thereby hastening the work of making his dairy farm again safe and sanitary; but he did not seem inclined to comply with my request.

It would be interesting to have a blood test (Widal) made on young Quillen; and by no means should milk again be sold from Taylor's farm until Quillen's stool and urine have been examined and found free from typhoid bacilli.

I wish to call your attention to another matter. His Excellency Governor Goldsborough requested me to examine a defective drain in front of his residence on High Street. The trouble is with the catch basin, the storm water being backed up by the tide.

This matter was brought up at the meeting of the City Council held on Friday evening, 2nd instant. After a thorough discussion the Council assured Dr. Wolff and myself that they would have the necessary alterations and repairs made within the next week or ten days.

Other cases of typhoid fever will develop in Cambridge within the next two weeks, in persons who are now incubating the disease. I believe we have averted a serious epidemic; but the disease prevails to an alarming extent already, and the situation should be carefully watched.

Very respectfully,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

ENDORSEMENT BY DR. PRICE.

Respectfully referred to the Acting Chief, Bureau Communicable Diseases, with instructions to immediately transmit copies of this report with endorsement to his Excellency the Governor, the Health Officer of Dorchester County and the Health Officer of Cambridge. The Health Officer of Cambridge is notified that anti-typhoid vaccine will be furnished from this office upon his request, stating the number of patients to whom it is to be administered. The H. O. of Cambridge is further advised to take samples of blood from George Quillen for the Widal test, also samples of the discharges in the lactose bile outfits, furnished by this Department. The closure of the dairy of Geo. B. Taylor is approved. This report is also approved.

MARSHALL LANGTON PRICE,

Secretary.

GENERAL REMARKS.

The first thing I did upon arriving at Cambridge was to inspect the dairy which is open to question. It is owned by George B. Taylor, and is known as Horn's Point Dairy, P. O., Cambridge, Md.

Mr. Taylor keeps twenty cows, and serves from twelve to fifteen gallons of milk daily, chiefly to the people of Cambridge. His dairy is only in fair condition. Flies abound, and his milk bottles are not wholly clean. The well on his place, used about the dairy, is quite a deep one, measuring 368 feet, protected from surface drainage.

CASES OF TYPHOID.

On Taylor's dairy farm there have been two recent cases of typhoid fever. There was one case on this farm, that of Mr. Taylor's daughter, three years ago. The first of the present series of two cases, that of George Quillen, a young white man aged twenty-two years, employed about the dairy, occurred two weeks and a half ago. He had been complaining for at least one week prior to that date. His case was a mild, unrecognized one; and he was off duty only for a few days.

The second case of typhoid fever on the Taylor dairy farm is that of Brice G. Peter's, the proprietor's grand-son. He has been quite ill for four or five days. On Monday, 29th of July, his temperature was 102°. He is a white lad eight years of age, probably infected through the milk produced in this dairy.

SEWAGE AND DRAINAGE.

The topography of this part of Dorchester County is quite flat, or gently rolling. As a consequence, the drainage about Mr. Taylor's premises is not very good. The barnyard is in a filthy condition, and his dairy buildings themselves cannot be upheld as models of cleanliness and neatness.

There is an unusually large and commodious outdoor toilet, of the surface type, in close proximity to a well in Mr. Taylor's door-yard. This toilet is in an abominable condition; and into it the typhoid stools are thrown, however, after having been disinfected.

INSPECTION OF OTHER DAIRIES.

In addition to Mr. Taylor's dairy, upon request of Dr. Wolff, I inspected two other dairies. The first was the Eldredge Farm Dairy, Mr. Frank Bryan, of Cambridge, being the proprietor. He keeps fifteen cows. There is no sickness on the place. The condition of this dairy is only "fair".

The second additional dairy inspected was Mr. Edward Gibbons', known as Ashland Farm Dairy. He keeps nine cows. There is no sickness on this place at the present time, but a colored boy employed thereupon had an attack of typhoid fever three years ago. The sanitary rating of this dairy is "good".

TYPHOID FEVER STATISTICS.

The following figures will show the gradual rise in the number of typhoid fever cases in Cambridge. At the time of my inspection, August 1 and 2, there were twenty cases of the disease; by Saturday, August 10, this number had increased to forty-two cases; by the 21st it had risen to fifty, and on the

following day (August 22) to fifty-two cases, on which date the epidemic practically came to a close.

Four deaths resulted—one in July, two in August and one in September.

MISCELLANEOUS.

At the time of my sojourn in Cambridge, I also accompanied Dr. Wolff to the home of Mr. William E. Lowry, on Fishing Creek, a branch of the Little Choptank River, wherein there are two cases of typhoid fever. Mr. Lowry sells nine or ten pounds of butter a week, in the Cambridge market.

I also examined the storm-water sewer at the extreme end of High street, Cambridge, upon the request of his Excellency, Governor Goldsborough. I located the trouble in the catch-basin, causing the storm-water to be backed up by the tide. A disagreeable odor results from the stagnating refuse, and abundant opportunity is given for the breeding of flies and mosquitoes. It would be well to remove the trap, in order to allow the storm-water an opportunity to escape.

The branch between the catch-basin and the 36-inch sewer is stopped up, largely because the fall is not sufficiently great. It would be well, I believe, if all sanitary sewers were made to empty four or five feet below water.

In Cambridge three specimens were collected, one of milk, one of water, and one of melted ice, and submitted for bacteriological and chemical analysis.

Respectfully submitted.

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

TYPHOID FEVER IN WESTMINSTER.

September 17, 1912.

Dr. John S. Fulton,

*Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Fulton: I have the honor to report upon the investigation of the typhoid fever outbreak in Westminster. Carroll County, made pursuant to your instructions on Monday, the 19th, and Thursday, the 22nd of August, 1912. In this inspection I was accompanied by Hon. David E. Walsh, Mayor of Westminster, by Dr. Charles R. Foutz, health officer, by Mr. Harry R. Hall, assistant engineer, Bureau of Sanitary Engineering, and by Mr. Frank Meyers, superintendent of the waterworks.

Shortly after my return from Westminster the following preliminary report, setting forth the essentials of the outbreak, was submitted to you.

PRELIMINARY REPORT.

August 24, 1912.

Dr. Marshall Langton Price, Secretary.

Dear Dr. Price—I have the honor to submit the following summary of the typhoid fever situation in Westminster, Carroll County.

There have been eleven cases of typhoid fever in Westminster. Two of these occurred in July and nine in August; July 15th is the date of the first case. Two of the eleven cases originated outside of the City of Westminster, and one was the result of direct contagion. This leaves only eight cases which should be charged to the City of Westminster.

Accidental pollution of a portion of the city water supply has been found to be the source of contagion. A stream which carries off the principal part of the sewage from the City of Westminster, in its onward flow, passes within seven feet of the impounding reservoir of the new water supply. It was demonstrated that seepage through the intervening seven-foot bank has occurred, thus polluting the water of the new pool or reservoir located at Cranberry. On last Sunday morning, August 18th, this source of supply was cut off from the City of Westminster.

I have just obtained information relative to two other insanitary conditions in Westminster, which have not as yet been investigated. One is an insanitary outdoor toilet; the other is a hogpen. Both are declared to be insanitary, and give forth very foul odors. The toilet is probably Zepp's, while the hogpen is probably Little's; both are on Liberty street between Chase and George, opposite Diffendal's, where there is a typhoid fever patient.

Very respectfully,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

COMPARATIVE FIGURES.

At the time of my investigation the typhoid fever cases, as stated above, numbered eleven in all. Occurring as they did, almost at the same time, aroused the apprehension of the Westminster authorities, and hence the demand for the present investigation.

Westminster, the county seat of Carroll County, is a thriving little city, located on the Patapsco River watershed, 34 miles from Baltimore, in the heart of a rich farming district and manufacturing community. It is steadily growing in population, in wealth, and in importance. The gradual rise in the number of its inhabitants is shown by the following Census Bureau statistics:

Population in 1880.....	2,507.
Population in 1890.....	2,903.
Population in 1900.....	3,199
Population in 1910.....	3,295

If the population of the outlying suburban and rural districts were included, it would swell the number to about 3,500.

EARLIER TYPHOID OUTBREAKS.

There never has been a real widespread typhoid fever epidemic in Westminster. Quite a number of cases occurred, however, in the summer and autumn of the year 1911. These will next be summarized, along with the figures of other years:

TYPHOID FEVER CASES IN WESTMINSTER.

<i>Year.</i>	<i>Number of Cases.</i>	<i>Number of Deaths.</i>
1908.....	16	0
1909.....	9	0
1910.....	9	0
1911.....	22	0
	<hr/>	<hr/>
Totals.....	56	0

In the present year, 1912, up to October 1, there have been 13 cases of typhoid fever in Westminster. At the time of my investigation, August 19 and 22, there was a total of 11 cases of the disease. The cases are scattered, there being no "infected area". They can be classified as follows, from the viewpoint of origin:

- a. Two of the cases contracted the disease outside of the City of Westminster.
- b. One case is the result of direct contagion or contact.
- c. Eight of the cases contracted the disease in Westminster.

The eight latter cases will first be considered.

CLINICAL HISTORIES.

All eight of the typhoid fever patients in the present outbreak, which can be fairly attributed to the city of Westminster, were white persons. In regard to sex, the patients were equally distributed—four being males and four females.

The youngest patient was a male aged seven years; the eldest, also a male, was aged sixty years. The ages of all eight patients are included in the following table:

AGE OF PATIENTS.

1 to 5 years.....	0
5 to 10 years.....	1
10 to 15 years.....	1
15 to 20 years.....	1
20 to 25 years.....	1
25 to 30 years.....	1
30 to 35 years.....	1
35 to 40 years.....	0
40 to 45 years.....	0
45 to 50 years.....	1
50 to 55 years.....	0
55 to 60 years.....	0
60 years and over.....	1

Total..... 8 cases.

In the above table it can readily be seen that the age distribution of these eight cases is pretty general, there being no age period more susceptible than another.

CHRONOLOGY OF CASES.

The date of onset of these eight Westminster typhoid fever cases is of interest. One of them developed in July, and seven of them in August. The month, the approximate day of the month, and the number of cases, are as follows:

ONSET OF WESTMINSTER TYPHOID CASES.

<i>Month.</i>	<i>Day of Month.</i>	<i>Number of Cases.</i>
July.....	20th	1
August.....	1st	3
August.....	4th	3
August.....	6th	2
Total.....		8 cases.

The first week in August, as indicated above, was most prolific in typhoid cases. The fact that so many as seven cases developed almost at the same time, would point to some local trouble as the probable cause of the outbreak.

Of the three remaining cases, making up the grand total of eleven, one developed the disease on the 15th of July; a second, on the 11th of August, and a third on the 16th of August.

PREVIOUS ATTACKS.

A history of three instances of previous cases of typhoid fever in the afflicted families was obtained. A recapitulation of these instances is hereby given:

(a) In one instance the father of the patient had an attack of typhoid fever twenty-five years previous.

(b) In one instance the mother of the patient had an attack of typhoid fever when she was a young girl.

(c) In one instance a son had an attack of typhoid fever at the age of fourteen years, or fifteen years previous to the present case in his mother.

IMPORTED AND SECONDARY CASES.

In addition to the eight cases of typhoid fever originating primarily in Westminster, there was a secondary case and two imported ones of the disease. A brief note on each of these will follow:

(a) The secondary case, a white female, aged twenty-two years, a housewife by occupation, who developed the disease on August 11th, waited on her father. He is one of the series of eight primary cases and developed the disease on July 20th.

(b) One patient, a young white man, aged 17 years, single, a machinist by occupation, visited at Hampstead, Carroll Coun-

ty, twelve days prior to the onset of the disease. His father when a boy, had an attack of typhoid fever.

(c) One patient, a white girl, twelve years old, with August 16th as the date of onset, had just removed from Frederick City, Frederick County, about two weeks before the beginning of her illness. Her mother had an attack of typhoid fever in Frederick.

SEWAGE AND DRAINAGE.

In ten of the eleven cases of typhoid fever, counting the secondary case and the two imported ones, the drainage of the premises is rated as effectual; in one instance the drainage is described as defective.

There is a surface toilet in the homes of nine of the patients; one has a box toilet, and in one instance there is no outdoor toilet at all. All of these toilets have been kept reasonably clean.

In ten of the cases the typhoid stools were disinfected, in five instances with carbolic acid alone, and in the remaining five instances with carbolic acid and hydrated lime. The disinfected stools, in five instances, were buried; in five others they were thrown into surface toilets; while in one instance the raw stools were thrown into an indoor toilet.

PROTECTION FROM FLIES.

In the homes of all eleven of the typhoid fever patients in Westminster, adequate protection from flies is provided. These insects did not appear to be very abundant, and I could trace no relation whatever between them and the typhoid cases.

RAW FOOD SUPPLY.

The raw food supply of the City of Westminster is very good. There is no uniformity in the supply of the eleven typhoid patients, as the following will show:

RAW FOOD STATISTICS.

<i>Where Obtained.</i>	<i>No. of Patients.</i>
Bought on the street or in open market.....	4
Homegrown.....	3
Purchased at Hunter's or Stoner's.....	3
Purchased in Baltimore.....	1
Total.....	11

It was ascertained that the raw food supply of Westminster had no bearing on the present typhoid fever outbreak.

MILK SUPPLY.

The citizens of Westminster are supplied with milk by a number of dairies. In regard to the eleven typhoid fever cases in that city, the milk supply is variable, as the following table will show:

MILK SUPPLY IN HOMES OF TYPHOID FEVER PATIENTS.

<i>Name of Dairyman.</i>	<i>July Cases.</i>	<i>August Cases.</i>	<i>Total.</i>
Murray Dutrow.....	1	2	3
David R. Geiman.....	0	1	1
Koontz and Dutrow.....	1	1	2
William Geiman.....	0	1	1
Joseph Hunter.....	0	1	1
Creamery and Morning Star Dairy (Clayton).....	0	1	1
H. E. Koontz.....	0	1	1
Joseph Hunter and Creamery (H. E. Koontz).....	0	1	1
Totals.....	2	9	11

WATER SUPPLY.

The people of Westminster have a public water supply furnished by two systems—the old, or Westminster Water Company, and the new, or Citizens' Water Company. In 1908, these two companies were united under the name of the Consolidated Public Utilities Company.

All of the typhoid fever patients used water from the new supply, or Citizens' Water Company. As stated in the early part of this report, the reservoir at Cranberry Station had been polluted by the seepage of sewage into it, which has been designated as the essential cause of the typhoid fever cases in Westminster.

MISCELLANEOUS.

The milk supply, the raw food supply, and the ice supply of Westminster can safely be excluded as possible factors in the typhoid fever outbreak. The element of contagion, excepting in the one instance—that of a young woman who waited upon her father, can also be eliminated.

In five of the eleven cases of typhoid, the person who nursed the patient handled food and drink for the other members of the family.

One of the patients, a white lady twenty-eight years of age, stated that she had had a light attack of typhoid fever ten years before.

It was represented to me that some of the water-plugs had not been flushed for two years.

SUMMARY AND CONCLUSIONS.

The essential data concerning the Westminster typhoid cases have been set forth in my preliminary note. As typhoid germs, while they do not multiply, live from one to three weeks in a body of water, it would be a wise precaution for the people of Westminster to boil their drinking water used during that period of time.

The city authorities have taken steps to prevent a further contamination of the public water supply, which, prior to the present trouble, has always been noted for its purity and wholesomeness.

It is believed that the prompt action taken in this matter has arrested the progress of what would have become a serious and widespread epidemic.

Respectfully submitted,

C. W. G. ROHRER,
Acting Chief, Bureau of Communicable Diseases.

TYPHOID FEVER INVESTIGATION AT ST. MARY'S
INDUSTRIAL SCHOOL.

BALTIMORE, Md., October 7, 1912.

Dr. Frederic V. Beitler.

*Acting Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Beitler: I have the honor to make the following report upon the investigation of the typhoid fever outbreak at St. Mary's Industrial School for Colored Girls, at Melvale, Baltimore County, made pursuant to your instructions on the 16th of September, 1912. At the time there were seven girls ill with typhoid, and several others have since developed the disease.

POPULATION OF THE SCHOOL.

At the St. Mary's Industrial School for Colored Girls, Melvale, there is a total population of 120 persons, distributed as follows:

- a. Ten employees—Mrs. Pennington, the superintendent; Mr. Pennington, her husband, and eight teachers.
- b. One hundred and ten girls or students, whose ages range from eight to twenty years.

The grounds about the school comprise seven and one-half acres, which are well kept and present an inviting appearance. The school has been at its present location for about seventeen years.

EARLIER CASES OF TYPHOID.

A few sporadic cases of typhoid have occurred at this school in time past. Last year (1911) there was one case, that of Kitty West; two years ago (1911) there were two cases, Virgie Norris and another girl; three years ago (1909) Miss Sophie Newport, aged seventy-two, one of the teachers, was stricken with it and removed to the Church Home and Infirmary.

Seven years ago Mr. Pennington, who has been at the school for three and one-half years, had typhoid fever in Harford County. Another teacher, Miss Juliet Umbaugh, had an attack fifteen or sixteen years ago. Miss C. V. MacKechnev, one of the teachers in the primary school, connected with the place, had an attack of fever twenty years ago.

PRELIMINARY REPORT.

A summarized account of the present typhoid situation is embodied in the following letter, which I submitted to you as a preliminary report.

September 19, 1912.

*Dr. Frederic V. Beitler, Acting Secretary,
State Department of Health,
Baltimore, Maryland.*

Dear Dr. Beitler—I have the honor to make the following preliminary statement concerning the investigation of the typhoid fever cases at St. Mary's Industrial School for Colored Girls, Melvale, Baltimore County, Maryland. The investigation was made on Monday afternoon, 16th instant. I was accompanied by the physician to the school, Dr. W. Winsey, and the superintendent, Mr. Ellis Pennington.

There are seven cases of typhoid fever in the Institution. I attribute them to defective drainage. The new sewage disposal plant, of the Imhoff type, has been out of order for three months. Its condition was extremely bad during the month of July. Much sewage collected in the tank and overflowed from same, contaminating the soil for some distance around. It was in the vicinity of this defective drain that the larger girls in the school, amongst whom typhoid fever especially prevailed, were permitted to roam and play. They probably became infected by direct contact with the sewage, and also through the agency of flies.

I could not locate a carrier case in this Institution, nor could I trace any connection whatever to the water or milk supply.

With the exception of the defective sewer, I pronounce St. Mary's Industrial School for Colored Girls in a good sanitary condition. The inmates should be forbidden to play in the vicinity of the infected soil and sewer for a period of several months at least. Infectious disease germs, notably typhoid bacilli, have been known to live in the soil for a period of one year. I also desire to recommend that an effort be

made to disinfect the bad drain and surrounding soil area. This could be done with the use of lime and carbolic acid, or any other approved method.

In the month of March an ash heap of many years' standing was removed and covered over the waste pipe leading from the road to Jones' Falls, passing within 100 yards of the Institution. It is hard to say what infectious material may have been contained in this ash heap; therefore, I also recommend that the pipe line over which the ashes were strewn be also disinfected with lime and carbolic acid.

It would be well to make an attempt to prevent flies from entering the room now used as a hospital for the typhoid fever patients.

I might add that not one of the seven cases of typhoid fever has been reported to this Bureau. Dr. Winsey was under the impression that when he sent blood to the laboratory he was reporting the case.

Very respectfully,

C. W. G. ROHRER,
Acting Chief, Bureau of Communicable Diseases.

ENDORSEMENT.

Respectfully referred to the Acting Chief of the Bureau of Communicable Diseases, with instructions to transmit copies of this preliminary report with endorsement to Superintendent of the Colored Industrial School; Dr. W. Winsey, the physician in charge, and the Health Officer of Baltimore County. I would suggest that the Superintendent of the School institute a sanitary means of caring for the sewage from the Institution. The report is approved.

FREDERIC V. BEITLER,
Acting Secretary.

A list of the existing cases will next be given, arranged in tabular form:

TYPHOID FEVER CASES AT ST. MARY'S INDUSTRIAL SCHOOL, SEPTEMBER, 1912.

<i>Name.</i>	<i>Age in Years.</i>	<i>Sex.</i>	<i>Color.</i>	<i>Duration of Illness.</i>
Lillian Russell.....	17	Female.	Colored.	4 weeks.
Viola Johnson.....	15	Female.	Colored.	3 weeks.
Pauline Harris.....	17	Female.	Colored.	2½ weeks.
Lilly Fisher.....	13	Female.	Colored.	2½ weeks.
Lillian Trusty.....	12	Female.	Colored.	1½ weeks.
Louise Stephney.....	19	Female.	Colored.	1 week.
Corinne Cornish.....	18	Female.	Colored.	½ week

There are girls of all ages in the school, but only the larger ones are ill. All seven of them are employed in the sewing-room, wherein garments are made for the Standard Overall Company, headed by Mr. Rosenbloom, Pratt and Penn Streets, Baltimore. No one in any way connected with the handling of the food supply is ill.

MILK SUPPLY.

St. Mary's Industrial School is furnished with a good milk supply, obtained from two well-known sources.

- a. Gardiner's Dairy, Baltimore;
- b. Baker's Dairy, Roland Park.

The milk supply is not open to question, in the present instance.

RAW FOOD SUPPLY.

The raw foods are obtained exclusively from Mr. H. C. Scott, corner Third and Chestnut Avenues, Hampden, and are of excellent quality.

WATER SUPPLY.

Ordinarily, the water supply at this school is obtained from two sources, both of which have always had a wide reputation for purity and wholesomeness. These are:

1. A large spring at the foot of the hill, well protected from outside contamination. The laboratory reports, it appears, has laid it open to suspicion; hence it has not been used by the School for about ten days. Ordinarily, Dr. Algire, the people working at the Distillery, and other people obtain their drinking water at this spring.
2. Well, one hundred and twelve feet deep, ordinarily protected from surface drainage.

ACCESSORY SUPPLIES.

The accessory water supplies at this school are also two in number, as follows:

1. An old spring at the place, which has been dry for some time.
2. A forty-foot well near the main building, used only for filling fire buckets and for washing the pavements.

SEWAGE AND DRAINAGE.

The school is provided with a sewerage system of the Imhoff type, which has been out of order for three months. It cost \$3,000.00. For three weeks, dating from July 1st, the sewerage system has been very much out of order, necessitating the use of the old toilet as a cesspit.

A new lavatory has been built, which is clean, commodious, and up to date. It is renovated twice a day. The old one, now used as a cesspit, had not been used for a year as a toilet. All of the toilet and house drainage is now diverted into it, awaiting the repair of the sewage disposal plant. For a couple of months this has been the state of affairs.

The following letter from Dr. Winsey, the physician to the school, contains much that is of interest in reference to the sewage disposal plant, and hence I shall here quote it entire. It also refers to the anti-typhoid inoculation of the inmates.

DR. WINSEY'S LETTER.

September 23, 1912.

Dr. C. W. G. Rohrer,
State Department of Health,
Baltimore, Maryland.

Dear Dr. Rohrer—Your report to Dr. Frederic V. Beitler, Acting Secretary, State Department of Health, of the conditions existing at the Industrial Home for Colored Girls at Melvale, was received this morning. I have carefully read your report and desire to make some comments thereon. I am sure you have no desire to do the Home and those responsible for its management any injustice. But there are some things that you say, but, more important still to my way of thinking, other things that you did not say, that might lead one not familiar with the conditions existing to draw wrong conclusions.

1. The Sewage Disposal Plant, which was constructed by plans drawn and supervised during its construction by one of the Engineers of the Sewerage Commission, and when finished pronounced all right before being accepted by the Managers of the Home. It was found, however, after several months' use, not to be all right. The Engineer's attention was called to the defects, and some minor changes were made, but still it did not work any better, but grew worse. When the weather grew warm we found we had to do something. We had drain pipes from the building and the Lavatory diverted to our old well, cut off connections with the Disposal Plant, had the Clarification Tank cleaned out and thoroughly disinfected (which had been done on the surface by Mr. Pennington some time previous to emptying the tank). The tank never did overflow, but a pipe below broke and the water from the tank ran down the bank. That was soon repaired, and the ground for a considerable distance around the tank was covered with Carbolate of Lime. The girls were never allowed to play close to this tank, either before or after there was trouble with it. I have the word of Mrs. Pennington for this statement.

2. The ash heap of which you spoke of being used to cover the drain pipes from the road was but a fraction of what was required to cover these pipes. The ground surrounding the pipes was cut down to slope towards it, and over one hundred loads of dirt was used to cover five hundred feet of pipe.

3. In both Kitchens and the 'Girls' Dining Room, the doors and windows are screened; in fact, the greater part of the Administration Building is screened.

The room used for Hospital purposes, though not screened, has netting tacked over the windows. The iron network used in the windows is to prevent escape, making it difficult to use screens.

4. The first girl who contracted the disease took to bed on the 18th day of August, and the second one on the 25th. Realizing that there seemed danger, I went to the Board of Health on August the 31st, and stated the case to Dr. Stoner. He kindly gave me a supply of the Typhoid Vaccine sufficient to vaccinate 50 people—as many as I thought I could handle in one day. And on September 1. I vaccinated 49 of the girls. On September 3, I vaccinated 48 more, and on the 8th I vaccinated the balance of the girls, making 112. Also Mrs. Pennington, the Superintendent who has charge of the sick girls, one other teacher and myself, and revaccinated those done on September 1. At this date, September 23, all but fifteen have had three vaccinations, and tomorrow, September 24, they will be vaccinated.

I consider it very important that these facts should be mentioned in your report, that those whose duty it is officially to know, that those responsible for the general care and health of the inmates of the Industrial Home have not sat idly by waiting for the interposition of a kindly Providence to do their work.

The one act of dereliction, as I see it, was in not reporting the cases aside for blood examinations. No harm could or has come from that mistake, because the State Department of Health had been made acquainted with the conditions existing at the Institution and their aid sought at least ten days before inspection was made.

I will add in conclusion that five of the girls now sick with the fever had received at least one vaccination, and four or five have the disease in a mild form.

Respectfully yours,

W. WINSEY.

MISCELLANEOUS.

The stools from the typhoid patients, after disinfection, are thrown into the sewer, which now discharges its contents into the old toilet transformed into a cesspit. When the sewerage system is working, the effluent, ninety-eight per cent. pure, eventually reached Jones' Falls, three hundred yards away, which stream is teeming with mosquitoes. In addition to the ordinary methods of cleanliness, carbolized lime as a disinfectant is strewn about the school buildings and premises three times a week.

Visitors are allowed at the school once a month, and not infrequently resort to the toilet accommodations. It is more than likely that an early case of typhoid fever, or a typhoid carrier, thus acted as a starting point of the disease, which only required a faulty sewer to aid in its dissemination.

The school grounds and the various departments of the school were inspected, and the excellent sanitary condition of all of them was carefully noted.

The following will suffice, as examples:

- a. Girls' Kitchen. Clean and screened.
- b. Girls' Dining Room. Clean, screened and well ventilated.
- c. Girls' Bathroom. In good condition.
- d. Girls' Laundry. Also in good condition.
- e. Workroom. In good condition.
- f. Dormitories. Also well kept and well ventilated.
- g. Schoolroom. Likewise in good, sanitary condition.

The playground for the larger girls is nearer the sewer than that for the smaller ones. The former have been attacked by the fever. There are a good many flies in the hospital quarters, which apartment would scarcely admit of being screened.

All of the girls have received two of the three inoculations against typhoid, and thirty-six have received the last. In several instances this was not done in time to prevent the disease, but it has modified the attack.

Two samples of water were collected for bacteriological and chemical analysis, as follows:

1. Artesian well, drawn from spigot in motor room.
2. Spring.

RECOMMENDATIONS AND CONCLUSIONS.

These have largely been set forth in my preliminary statement submitted immediately after my investigation. The sanitary condition of the school, with the exception of the faulty sewer, is such that the presence of typhoid fever must be purely an accidental occurrence.

As the premises around the school have been disinfected and made sanitary, it would appear that a remodelling of the sewer plant, the primary source of the trouble, would be next in order.

The energy displayed by the management of the place, Mr. and Mrs. Pennington, and by Dr. Winsey, the attending physician, is highly commendable.

Respectfully submitted,

C. W. G. ROHRER,

Acting Chief, Bureau of Communicable Diseases.

TYPHOID FEVER EPIDEMIC AT TOWSON.

Towson, November 15, 1912.

Dr. Frederick V. Beitler,

*Acting Secretary, State Board of Health,
Baltimore, Md.*

Dear Dr. Beitler: I have the honor to report upon the investigation of the typhoid fever outbreak in Towson, Baltimore County, made pursuant to your instructions on Wednesday, the 18th of September, 1912. I was accompanied by Dr. R. C. Massenburg, health officer of the district. For some time typhoid fever had prevailed to an alarming extent in this community. The location of Towson on the Baltimore City watershed also added to the seriousness of the situation. Altogether there were 56 cases of the disease.

COMPARATIVE FIGURES.

A few cases of typhoid fever have occurred in Towson every year, especially in the late summer and early autumn months. In this respect the disease has conformed closely to the well-established rule that typhoid is essentially an autumnal malady.

The following table, giving the three-year incidence of the disease by months, will indicate at a glance the high-tide of the affection, being in the month of August, in the year 1909; in the month of October, in the year 1910; in the months of August and September, in the year 1911.

TYPHOID MORBIDITY AND MORTALITY IN TOWSON.

	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>	<i>Total.</i>
1909.													
Morbidity.....	0	0	0	0	0	0	2	5	0	2	0	0	9
1910.													
Morbidity.....	0	0	0	0	0	0	4	2	2	11	8	2	29
1911.													
Morbidity.....	0	0	0	0	0	1	1	7	7	4	2	1	23
Total Morbidity	0	0	0	0	0	1	7	14	9	17	10	3	61

	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>	<i>Total.</i>
1909.													
Mortality.....	0	0	0	0	0	0	1	0	0	0	0	0	1
1910.													
Mortality.....	0	0	1	0	0	0	0	1	0	0	0	0	2
1911.													
Mortality.....	0	0	0	0	0	0	0	0	1	0	0	0	1
Total Mortality	0	0	1	0	0	0	1	1	1	0	0	0	4

In the first six months of 1912, there were four cases of sickness, with one death, distributed as follows: two cases of sickness in February and two in June; the one death which resulted occurred in March.

PRESENT OUTBREAK.

That typhoid fever was unduly prevalent in Towson, was brought to the knowledge of the State Department of Health in the latter part of August. On the 4th day of September a preliminary investigation was made, which revealed the fact that the sanitary conditions of the town, especially as regards sewerage and drainage, were exceptionally bad; and that the seeds of a deadly contagion when once introduced, could scarcely help but cause a serious and widespread epidemic.

At this date (September 4th) it was also found that the town of Towson was literally dotted with surface toilets and cess-pools, most of which were but poorly kept and dangerous to the public health. Many of these insanitary nuisances were located in close proximity to the surface wells, which source furnishes a large part of the water used by the people of Towson for drinking and culinary purposes. In these and many other respects, the urgent need of a sewerage system for Towson was urgently demonstrated.

STATUS OF TOWSON.

The town of Towson, county seat of Baltimore County, one of the largest and most opulent counties of Maryland, is located at the headwaters of the Lake Roland watershed, about six

miles from the City of Baltimore. It has a population of 2,500.

Compared with the cities and towns of Maryland, there is much that should be done in Towson, from the standpoint of public health. It is wholly a residential town, there being not a single live industry located in it. It is also the seat of the court-house and other public buildings, a feature which attracts to it many persons throughout the county. This lends an additional reason for the safeguarding of public health matters in Towson.

CLINICAL HISTORIES.

In regard to the sex and color of the 56 typhoid fever patients in Towson, 26 were males and 30 were females; 49 were white and 7 were colored. Their ages range from 2 years to 53 years, the greatest number of cases, 5 in each instance, occurring at the age of 12 years, 17 years, and 22 years. But ten of the cases occurred in persons beyond 25 years of age.

The family incidence is not a marked one, showing that the element of direct contagion had been pretty well guarded against. In no instance were there more than two cases in a single family, but this occurred in at least seven households.

CHRONOLOGY OF CASES.

The Towson typhoid epidemic of 1912 prevailed most extensively in the months of August and September. It really began in July, and continued until the middle of October. The monthly distribution of the cases is, as follows:

In the month of July.....	4 cases.
In the month of August.....	23 cases.
In the month of September.....	19 cases.
In the month of October.....	10 cases.
Total.....	56 cases.

The cases are scattered, there being no "infected area." In seven or eight instances more than one case occurred in a household.

RATE OF MORTALITY.

One of the patients, a white female aged 40 years, a school-teacher by occupation, died of the disease at her home in Towson, after an illness of three weeks. Several others died in the hospitals of Baltimore; and for this reason I have no accurate account of the total number of deaths which occurred, but my impression is that there were four altogether. A majority of the cases were mild, and hence the low death rate, 1 to 14, the usual proportion in rural Maryland being as 1 to 10.

ORIGIN OF THE DISEASE.

The origin of the disease was traced to one man's milk route, whose wife had had an attack of typhoid fever two years previously. The stool and urine of this woman were examined bacteriologically, and typhoid bacilli were demonstrated therein. She had been employed about the dairy, and had dispensed milk to customers. Of a total of 56 cases of typhoid fever which occurred in the Towson milk outbreak, five-sixths, or between 45 and 50, developed in persons who had used milk obtained from this dairy.

METHOD OF SUPPRESSION.

The infected dairy was ordered closed on the 28th of September; and in ten days the epidemic was practically at an end. Rigid steps were taken to prevent the occurrence of secondary cases of the disease. These consisted in a thorough examination of the water from all surface wells used for drinking purposes, the disinfection by means of chloride of lime of those found polluted, and a thorough cleaning up and liming of all surface toilets and cess-pools within the limits of the town of Towson.

CONCLUDING REMARKS.

The Towson epidemic is a good example of a milk-borne infection of typhoid. As is usually the case in such outbreaks, the incubation period was short, those attacked were largely young persons, and the cases were relatively mild in character.

The water supply, as well as the raw food supply used by the people of Towson, is quite variable; and it was determined that neither of these had any primary bearing on the typhoid fever outbreak.

Moreover, upon investigation the water supply of the people of Towson was found to be pretty generally bad. It is here-with recommended that the town of Towson make an effort to obtain a water supply of undoubted purity, that an adequate system of drainage be provided, and that the milk dairies be kept sanitary.

Respectfully submitted,

C. W. G. ROHRER.

Acting Chief, Bureau of Communicable Diseases.

Cases Examined for Diagnosis.

CASE NO. 1.

Date Reported: January 22, 1912. Date Examined: January 22, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Oscar Robinson. Address: Halethorpe, Baltimore County. Age: 24 years. Color: Colored. Sex: Male. Married. Date of Onset: January 15. Date of Eruption: January 16.

Previous History: Occupation, farmer. Patient was vaccinated seventeen (17) years ago. Has a faint, large scar on left arm. He has had usual diseases of childhood, but states that he has had no other eruption.

Present History: Patient felt badly on Monday, 15th. No vomiting or lumbar pains. Heavy feeling—burning and soreness—in stomach. Had been constipated for three (3) days. Headache and feverish on Tuesday; eruption appeared Tuesday night.

Clinical Examination: Visicular eruption—some contain a little pus—appearing in crops. Was first noticed on face, which is now nearly well. One lesion on edge of left upper eye-lid; one on back of right hand; none on palate or buccal mucosa. Eruption most profuse on back and on chest. Arms and thighs also involved. Very few lesions on forearms and hands, legs and feet. None on the palms of the hands or soles of the feet. Vesicles unilocular; lesions begin as vesicles; occur in successive crops. Some are whitish, and contain a little pus.

Diagnosis: Varicella, or chickenpox.

CASE NO. 2.

Date Reported: February 14, 1912. Date Examined: February 16, 1912. Examiner: Dr. Rohrer. Disease Suspected: Scarlet Fever. Name: Frances Shank. Address: Smithsburg, Washington County. Age: 5 years. Color: White. Sex: Female. Single. Date of Onset: February 11. Date of Eruption: February 12.

Previous History: Parents state that child has had no previous exanthematous disease.

Present History: Disease began with vomiting and rise of temperature, on last Sunday night. Vomitus of a yellowish color; temperature, 105°.

Clinical Examination: "Strawberry" tongue beautifully shown. For five (5) days—Sunday, Monday, Tuesday, Wednesday and Thursday—patient had sore throat. Cervical glands considerably swollen, both sides. Entire body covered with a scarlet-red eruption, which is now beginning to clear up a little. Cheeks are beginning to show a fine desquamation.

Diagnosis: Scarlet fever.

List of Contacts:

1. Mr. B. F. Shank.
2. Mrs. Alice Shank.

CASE NO. 3.

Date Reported: February 14, 1912. Date Examined: February 16, 1912. Examiner: Dr. Rohrer. Disease Suspected: Scarlet fever. Name: Mark Selsman Rowe. Address: Smithsburg, Washington County. Age: 6 years. Color: White. Sex: Male. Single. Date of Onset: February 6. Date of Eruption: February 7.

Previous History: Patient is a schoolboy—Shank's School. Has never had any other eruptive disease.

Present History: Tuesday, February 6th, patient was brought home from school—Shank's School. Patient had biliary vomiting and severe headache.

Clinical Examination: Scarlet rash (eruption) over entire body. Patient was very sick from the beginning of his attack. On the second day of the disease he had soreness of throat. Cervical glands very much swollen, both sides. Typical "strawberry" tongue. Eruption fading. First appeared on body—around waist.

Diagnosis: Scarlet fever.

List of Contacts:

1. George Melvin Rowe.
2. Elmer S. Rowe.
3. Mamie F. Rowe.

CASE NO. 4.

Date Reported: February 14, 1912. Date Examined: February 16, 1912. Examiner: Dr. Rohrer. Disease Suspected: Scarlet fever. Name: George Melvin Rowe. Address: Smithsburg, Washington County. Age: 7 years. Color: White. Sex: Male. Single. Date of Onset: February 15. Date of Eruption: February 15.

Previous History: Patient is a schoolboy. Patient never had a previous attack of exanthematous disease.

Present History: Early yesterday morning (Thursday, February 15), patient was seized with vomiting and expectoration. Face flushed, and rise of temperature.

Clinical Examination: Tongue heavily coated; through coating "strawberry" tongue is visible. Throat sore and ulcerated; cervical glands, both sides, swollen; scarlet eruption over entire body.

Diagnosis: Scarlet fever.

List of Contacts:

1. George Melvin Rowe.
2. Elmer S. Rowe.
3. Mamie F. Rowe.

In addition to the foregoing three (3) frank cases of scarlet fever—Nos. 2, 3 and 4 I saw, with Dr. Pitsnogle, five (5) children who apparently had almost recovered from scarlet fever, making a total of eight (8) cases:

1. Murrell Kendall, in school 9 days.
2. Annie Hoover, Cheese Hollow.
3. and 4. Earl Bachtel's two little girls.
5. Child of Charles Hoffman.

The Kendall boy, Smithsburg, was in school nine (9) days. Is desquamating. Charles Hoffman's child was first case of all. All five (5) of these convalescents from scarlet fever are practically well, except the "peeling". These make a total of eight (8) cases of scarlet fever in Smithsburg and vicinity.

CASE NO. 5.

Date Reported: April 1, 1912. Date Examined: April 2, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Ernest Lizer. Address: 420 West Church Street, Hagerstown, Maryland. Age: 27 years. Color: White. Sex: Male. Married. Date of Onset: March 22. Date of Eruption: March 30, 1912.

Previous History: Patient is a brakeman on the W. M. R. R., Cumberland division. Patient has one vaccination scar, dating from 13 years ago. Had measles and mumps when a boy. Has had no previous illness like the present one. I could not obtain a history of lues.

Present History: Trouble began with headache and pain in small of the back; vomited after taking medicine. Slight bronchitis; symptoms of grip. Patient stopped work Thursday night, March 21st. Had been housed up about one week before Dr. Kneisley saw him. He felt better on Sunday, March 31st.

Clinical Examination: Pulse: 80 beats per minute. Temperature: 102.6° F. On Thursday, March 28th, when Dr. Kneisley first saw him, he had a temperature of 102°. A reddened, papulo-macular eruption of a pretty severe type, over covered portions of body principally. A few lesions over face and neck, and over dorsal surfaces of hands and feet. There are general symptoms also: a. Coated tongue; b. Pain and soreness of entire body; c. Headache; d. Anorexia. Eruption is erythematous, redness extending beyond confines of lesion. Lesions vary in size—some large, others small.

Diagnosis: Erythema multiforme, maculo-papular type, with a strong suspicion of syphilis.

NOTE: I tried to elicit other symptoms, or a history of syphilis, but was unsuccessful. Dr. Pitsnogle, however, wrote me later that the lesions did not yield to treatment till potassium iodide had been given.

CASE NO. 6.

Date Reported: May 18, 1912. Date Examined: May 18, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Sweton Michael. Address: Aiken, Cecil County. Age: 19 years. Color: White. Sex: Male. Single. Date of Onset: May 12. Date of Eruption: May 15.

Previous History: Patient is a Macedonian, a railroad laborer, who has been in this country but three (3) months. He cannot speak English. He was vaccinated when quite small, and has a large scar on extensor surface of right forearm. Patient stated that he has had no specific trouble, and none of the diseases incident to childhood.

Present History: Patient has been ill for six (6) days—pains in legs and in lumbar region. Nausea, but no vomiting. Patches of eruption itch slightly.

Clinical Examination: Patient has coated tongue and other febrile symptoms; temperature, in morning, 102° F.; at 2:30 this P. M. 102.5°. Eruption, elevated and coated with minute vesicles, first appeared on forehead and face, the latter being slightly swollen. There are no lesions in mouth or on eyelids. Eruption most abundant on face, forehead and sides of neck. Also quite marked on dorsal surface of hands and wrists, and on extensor surface of fingers and thumbs. There are

a few lesions over gluteal region and anterior surface of chest. Lesions are surrounded by a reddened areola, and are irregular in size.

Diagnosis: Pityriasis rubra.

NOTE: Dr. L. G. Taylor, of Perryville, Cecil County, the attending physician, informed me that he cured this case by the use of the following: Rx. Powd. Calamine, Powd. Zn. Ox., Glycerine, Alcohol, Acid Boracic, Liquor. Calcis. M. and apply.

Dr. Taylor stated that the disease was rebellious to treatment, holding out for over a month.

CASE NO. 7.

Date Reported: October 14, 1912. Date Examined: October 15, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Ralph Snyder. Address: Williamsport, Washington County. Age: 6 years. Color: White. Sex: Male. Single. Date of Onset: October 11, 1912. Date of Eruption: October 12, 1912.

Previous History: Occupation: School-boy. Had been vaccinated September 10th; did not take. Has not had any other sickness.

Present History: Prodromal symptoms scarcely noticeable. On Saturday, October 12, one vesicle was detected on each shoulder blade.

Clinical Examination: Patient has a moderate number of vesicles and scabs, over the covered portions of his body principally. A few on his face and extremities. Vesicles, when typical, are unilocular. Are irregular in size and contour. Slightly areolated. Four (4) of these vesicles appear on vaccination site.

Diagnosis: A mild case of chickenpox.

List of Contacts:

1. Child's father.
 2. Child's mother.
 3. William Snyder, 4 years old.
 4. Isaac Snyder, 1 year old.
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CASE NO. 8.

Date Reported: October 14, 1912. Date Examined: October 15, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Nina Mentzer. Address: Williamsport, Washington County. Age: 6 years. Color: white. Sex: Female. Single. Date of Onset: October 11, 1912. Date of Eruption: October 12, 1912.

Previous History: Occupation: School-girl. Patient was vaccinated on September 17th; did not take. Patient has had measles and mumps.

Present History: Eruption, beginning as "little blisters," is stated to have appeared first on face and ears. Prodromes very mild.

Clinical Examination: Face slightly swollen, rather unusual in chickenpox. Parents stated right eye almost swollen shut this morning. Vesicular eruption over body principally; a few lesions over face and extremities. Some of the lesions are drying up. No lesions on mucous membranes.

Diagnosis: A case of varicella or chickenpox.

List of Contacts:

1. Henry M. Mentzer.
2. Mrs. Mentzer.
3. Clayton Mentzer, aged 4 years.
4. Roland Mentzer, aged 1 year.

CASE NO. 9.

Date Reported: November 9, 1912. Date Examined: November 10, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Johnson Keys. Address: Cumberland, Allegany County. Age: 26 years. Color: Colored. Sex: Male. Single. Date of Onset: November 3, 1912. Date of Eruption: November 6, 1912.

Previous History: Occupation: Laborer in Vang's Construction Camp. Patient had never been vaccinated. Has had usual diseases of childhood.

Present History: Patient was in bed last Tuesday, November 5th. Prodromes: Disease began with headache, backache and bronchitis.

Clinical Examination: Patient has a sparse eruption, pustular in character, beginning to desiccate. The lesions are mostly on the extensor surfaces. The eruption has a pretty general distribution; there are a few lesions on the hands and on the feet. Lesions are slightly areolate, but this is difficult to detect in a colored person.

Diagnosis: Variola discreta.

For list of contacts see special report by Dr. Harrington.

CASE NO. 10.

Date Reported: November 9, 1912. Date Examined: November 10, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: S. J. Swarenger. Address: Cumberland, Allegany County. Age: 24 years. Color: Colored. Sex: Male. Married. Date of Onset: November 3, 1912. Date of Eruption: November 6, 1912. Occupation: Laborer, in Vang's Construction Camp.

Previous History: Negative. Patient is an unvaccinated colored man.

Present History: The disease began last Sunday and Monday; symptoms resembled grip—headache, nausea, pain in back and limbs. The patient spent last Tuesday, November 5, in bed.

Clinical Examination: Disease is discrete smallpox of a mild type, beginning desiccation or drying stage. The eruption though sparse, has a general distribution. A majority of the lesions, however, are on the face. There are several on the hands, several on the feet, and a small number on the forehead and scalp. The lesions were first observed on the forehead. They are multilocular and slightly areolated.

Diagnosis: Variola discreta.

For contacts see special list of Dr. Harrington.

CASE NO. 11.

Date Reported: November 9, 1912. Date Examined: November 10, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Eugene Wright. Address: Cumberland, Allegany County. Age: 19 years. Color: Colored. Sex: Male. Single. Date of Onset: November 5, 1912. Date of Eruption: November 8, 1912. Occupation: Laborer, in Vang's Construction Camp.

Previous History: Negative. An unvaccinated colored man.

Present History: Illness began last Tuesday, 5th inst. Prodromes: headache, nausea, vomiting and high fever. Eruption appeared on Friday, 8th.

Clinical Examination: Patient has a sparse eruption generally distributed, pustular and beginning to dry. State of disease similar to the two immediately preceding—Nos. 9 and 10.

Diagnosis: Variola discreta.

For contacts see list submitted by Dr. Harrington.

CASE NO. 12.

Date Reported: November 9, 1912. Date Examined: November 10, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Robert Cosin. Address: Cumberland, Allegany County. Age: 33 years. Color: Colored. Sex: Male. Single. Date of Onset: November 4th, 1912. Date of Eruption: November 6, 1912. Occupation: Hod-carrier.

Previous History: Negative. Patient is an unvaccinated colored man.

NOTE: This is the worst case in the entire series of 11 Cumberland cases, rather 10 in Cumberland and 1 in Midland.

Present History: Prodromal symptoms—nausea, vomiting, headache, backache and high fever—began last Monday, followed by eruption on Wednesday night.

Clinical Examination: A severe case of discrete or semi-confluent smallpox. Eruption from the crown of his head to the soles of his feet. Eruption is papular, becoming vesicular. This is the worst case in the present series of smallpox cases. Eruption first appeared on forehead. He had had headache, backache and fever for three days.

Diagnosis: Severe discrete or semi-confluent smallpox (variola).

List of Contacts: As in the previous cases, see special list, in report by Dr. Harrington, health officer of Cumberland.

CASE NO. 13.

Date Reported: November 9, 1912. Date Examined: November 10, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: George Bradley. Address: Cumberland, Allegany County. Age: 18 years. Color: Colored. Sex: Male. Single. Date of Onset: November 6th. Date of Eruption: November 7th, 1912. Occupation: Laborer, working in B. & O. yards.

Previous History: Negative. Patient is an unvaccinated colored man.

Present History: Disease began last Wednesday, with nausea and fever. No headache or backache. Eruption first noted on Thursday following, November 7, 1912.

Clinical Examination: Case is a mild one of discrete smallpox. Eruption is sparse, and generally distributed. Case resembles previous ones. Lesions are in the pustular stage.

Diagnosis: Mild discrete smallpox.

List of Contacts: See special report by Dr. Harrington.

IMPORTANT NOTE: A colored man named Ben McDonald, who came from Dallas County, Texas, and visited No. 11 Mill Street, in Cumberland, and Vang's Construction Camp, is believed to have sowed the seeds of the smallpox contagion in Allegany County, primarily in Cumberland. About four weeks ago (four weeks prior to November 10), McDonald visited the above places. The patients tell me that he had "big bumps over his face and body just like they have." McDonald, it is stated, went from Cumberland to Martinsburg, W. Va., and the health authorities of that state were so informed. Two weeks subsequent to McDonald's visit the disease began.

CASE NO. 14.

Date Reported: November 23, 1912. Date Examined: November 23, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Grafton Wardell. Address: Perryville, Cecil County. Age: 10 years. Color: White. Sex: Male. Single. Date of Onset: November 20, 1912. Date of Eruption: November 20, 1912.

Previous History: Patient has a good vaccination scar. Has had measles, mumps, chickenpox, whooping-cough. Patient is a school-boy—attending the Perryville School. I saw this patient with Dr. L. G. Taylor, of Perryville.

Present History: Patient was sent home from school, because he has a few skin lesions on the right side of his head.

Clinical Examination: Patient has two encrusted pustular lesions at the top of his right ear. He has three or four healed lesions on the back of his neck. He has scratches over both wrists and hands, caused by trauma while playing football. No lesions on body. Boy is a little anemic.

Diagnosis: Impetigo, simple form.

CASE NO. 15.

Date Reported: November 23, 1912. Date Examined: November 23, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Nelson Wardell. Address: Perryville, Cecil County. Age: 6 years. Color: White. Sex: Male. Single. Date of Onset: November 22, 1912. Date of Eruption: November 22, 1912.

Previous History: He had the usual diseases of childhood, including measles, mumps, chickenpox and whooping-cough. Patient has recently been vaccinated; the scar is just healing. Patient is a school-boy in the Perryville School. I also saw this patient, a brother of No. 14, with Dr. L. G. Taylor.

Present History: Patient is not ill. He was sent home from the Perryville School, because he has a blister on his lip.

Clinical Examination: Patient has no eruption over face, or body or limbs. He has a fever blister on the left side of his upper lip. Other than the fever blister, the boy is in excellent health.

Diagnosis: Herpes facialis.

CASE NO. 16.

Date Reported: November 25, 1912. Date Examined: November 26, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Frank Gaines. Address: No. 11 Mill Street, Cumberland. Age: 19 years. Color: Colored. Sex: Male. Single. Date of Onset: November 17th, 1912. Date of Eruption: November 22, 1912. Occupation: Is employed at B. & O. machine works.

Previous History: Patient has never been vaccinated, until about one week after exposure to infection from the first case (Case No. 9). Vaccination has taken, and has apparently modified the course of the disease. Otherwise, past history is negative.

Present History: Disease began about 10 days ago, with headache, nausea, pain in back, and fever—as prodromal symptoms. Patient thought he had the grip. Three or four days ago the eruption appeared, first on the forehead and face.

Clinical Examination: Patient has a moderate number of lesions, in the vesicular stage. The eruption is pretty evenly distributed. There are no lesions on the eyelids; there is one on the soft palate; and one on the ball of the left thumb; and two on the right foot. A greater number of lesions are on the forehead and face; and some are found on the hairy portions of the scalp.

Diagnosis: Variola discreta.

List of Contacts: See list submitted by Dr. Harrington.

CASE NO. 17.

Date Reported: November 25, 1912. Date Examined: November 26, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Dr. J. C. Holdsworth. Address: Midland, Allegany County. Age: 46 years. Color: White. Sex: Male. Married. Date of Onset: November 20th, 1912. Date of Eruption: November 23, 1912. Occupation: Physician, and health officer of Allegany County.

Previous History: Patient had never been vaccinated until three (3) days after exposure to infection. It is advisable to get vaccinated within three (3) hours after exposure. Dr. Holdsworth thought he had had an attack of smallpox when a boy; so his mother informed him. The vaccination "took", and unquestionably modified the course of the disease.

Present History: The onset of the disease was characterized by violent headache, and backache, and vomiting. Symptoms abated when eruption appeared. He wakes up in the morning with a slight headache; he has a touch of it now.

Clinical Examination: Onset: Wednesday, November 20th, 1912. Eruption: Saturday, November 23rd, 1912, on which day there appeared one or two lesions on the forehead. On Sunday, November 24, one or two lesions appeared on the wrists. Yesterday, November 25, lesions appeared all over the body—from the crown of his head to the soles of his feet. Eruption is papular, becoming vesicular. Quite a number of lesions on patient's back and chest. One or two on each foot: none on the palms of his hands or in his mouth. He has sore throat, and states that the eruption itches.

Diagnosis: Smallpox, moderately severe, discrete type.

List of Contacts: Wife and 3 children, all of whom have been vaccinated, and in all it has "taken".

CASE NO 18.

Date Reported: November 25, 1912. Date Examined: November 26, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Myrtle Clark. Address: Western Maryland Hospital, Cumberland. Age: 21 years. Color: White. Sex: Female. Single. Date of Onset: November 20th, 1912. Date of Eruption: November 25, 1912. Occupation: Nurse in Western Maryland Hospital.

Previous History: Patient had never been vaccinated until several days after exposure. She nursed the original case of smallpox during his preliminary stage, who was in the hospital under treatment for "typhoid fever," as no suspicion of smallpox was entertained at the time. See Case No. 9. Patient was vaccinated on the 13th, and has a good "take".

Present History: Onset six days ago, with headache, pain in left side and back; nausea but no vomiting. Eruption yesterday, 25th inst., first on the shoulders.

Clinical Examination: Onset: Last Wednesday, 20th inst. Eruption: Yesterday, 25th inst., first appearing on the shoulders. Eruption very sparse; papular stage becoming vesicular. Tomorrow will be two weeks since patient was vaccinated, a good "take". Highest temperature of patient: 102 3-5°; has been subnormal—down to 97° F.; is now 97.6° F.

Diagnosis: Variola discreta, mild case.

List of Contacts: See Dr. Harrington's list.

CASE NO. 19.

Date Reported: December 17, 1912. Date Examined: December 18, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: Nellie Stine. Address: Westernport, Allegany County. Age: 30 years. Color: White. Sex: Female. Single. Date of Onset: December 13th, 1912. Date of Eruption: December 16, 1912. Occupation: Housemaid, employed at Roby's Hotel, Piedmont, W. Va.

Previous History: Patient had never been vaccinated. She has had the usual diseases of childhood, including scarlet fever.

Present History: On last Friday, 13th inst., patient had dull headache and vomiting. No pain in back. On Monday, 16th inst., eruption appeared, first on forehead, face and nose.

Clinical Examination: Patient has a sparse eruption, in the desiccation stage. It is general, in distribution. There is one lesion on the right eyelid; none on the buccal mucosa; and a few on the legs and feet. The lesions are areolated, and drying up, as stated above, and the disease has evidently existed a greater length of time than one is led to believe by the patient's statement.

Diagnosis: Variola discreta, in desiccation stage.

List of Contacts:

1. Mrs. Ellen Stine.
2. Leo Stine.
3. Lottie Stine.
4. Rose Stine.
5. Bernard Stine.
6. Jimmie Stine.
7. Nellie Stine.
8. Eva Stine.

All have been vaccinated by Dr. Alexander B. Kalbaugh. It was done last Sunday night, 15th inst.

The contacts at Roby's Hotel, Piedmont, W. Va., were vaccinated by Drs. Long and Parsons. Sprigg Orndorff was the first smallpox patient in Piedmont; Mr. West was the second. Both are white men. There are six (6) cases of smallpox in Piedmont—3 in the Roby Hotel, and 3 scattered about through the town.

CASE NO. 20.

Date Reported: December 17, 1912. Date Examined: December 18, 1912. Examiner: Dr. Rohrer. Disease Suspected: Smallpox. Name: William Sakeman. Address: Westernport, Allegany County. Age: 32 years. Color: White. Sex: Male. Married. Date of Onset: December 7th, 1912. Date of Eruption: December 11, 1912. Occupation: Marble cutter, in Piedmont, W. Va.

Previous History: Patient has never been successfully vaccinated. He had typhoid fever last July. He has had all the diseases of childhood.

Present History: Prodromes resembled grip—patient “ached all over”, had a terrific headache, and severe pain in the small of his back. He was nauseated, but did not vomit. These symptoms continued for 3 days and 3 nights.

Clinical Examination: Patient has a moderate number of lesions, pretty generally distributed, and being in the late pustular stage. The eruption appeared first on forehead and scalp, then on the face. There are a few on the chest, and a much larger number on his back, legs and hips. There are a few lesions on his hands and feet; none on his mucuous membranes. The lesions are surrounded by an areola. They are most numerous of all on the buttocks and posterior surfaces of the thighs.

Diagnosis: Variola discreta, late pustular, beginning desiccation.

List of Contacts:

1. Mrs. Bessie Sakeman.
2. Hilda Sakeman.
3. William Greenwade.
4. Mrs. Wm. Greenwade.
5. John Martin (proprietor).
6. Ernest Martin.

Nos. 5 and 6 work in Martin's Marble Yard, in Piedmont, with the patient.

NOTE: All of the contacts have been vaccinated.

Report of the State Food and Drug Commissioner.

CHAS. CASPARI, JR., Commissioner.

State Board of Health for Maryland.

Gentlemen: Herewith I beg to submit my report for the twelve months ending December 31, 1912.

As shown by the schedule belcw, 1775 samples of foods and drugs were analyzed during the past year, of which number 1457 were passed and 318 were alleged to be in violation of the law. Of the latter, 57 cases were of such a nature as to warrant prosecution and, by direction of your honorable body, were submitted to the proper law officers, 51 in Baltimore City, 2 each in Kent County and Washington County, and 1 each in Baltimore County and Somerset County.

LIST OF SAMPLES OF FOODS AND DRUGS ANALYZED JANUARY
1st, 1912, TO JANUARY 1st, 1913.

	<i>Passed.</i>	<i>Not Passed.</i>
Butter.....	116	0
Cherries.....	21	0
Extract of Almond.....	0	1
Extract of Raspberry.....	0	2
Extract of Rose.....	0	1
Extract of Strawberry.....	0	1
Extract of Lemon.....	26	14
Extract of Orange.....	10	1
Essence of Peppermint.....	3	1
Extract of Vanilla.....	34	10
Fowler's Solution.....	335	69
Hamburg Steak.....	66	18
Lard	72	0
Lime Water.....	40	0
Olive Oil.....	3	0
Rice	3	6
Salad Oil.....	0	8
Sweet Oil.....	0	2
Soda Water Flavors.....	2	0
Spirit of Camphor.....	1	0
Syrup Iodide of Iron.....	336	45
Tincture of Iron.....	321	97
Vinegar	50	39
Apple Jelly.....	1	0
Damson Preserves.....	1	0
Corn Syrup and Honey.....	1	0
Apple Glucose Jelly.....	1	0
Apple Jelly.....	1	0
Apple and Strawberry Jelly.....	1	0
Raspberry Preserves.....	1	0
Apple and Blackberry.....	0	1
Apple Preserves.....	0	1
Apple Jelly.....	0	1
Peach Preserves.....	1	0
Strawberry and Apple Preserves.....	1	0
Pure Apple Jelly.....	1	0
Bar-De-Luc	1	0
Crab Apple Jelly.....	1	0
Conserved Fruit.....	1	0
Quince Jam.....	1	0
Apple & Blackberry Preserves.....	1	0
Raspberry Flavor Jelly.....	1	0
Currant Jelly.....	1	0
Strawberry Jam.....	1	0
Total.....	<hr/> 1457	<hr/> 318

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW OF MARYLAND DURING 1912.

<i>City, Town, or County.</i>	<i>Lab. No.</i>	<i>Name of Defendant.</i>	<i>Date Sample Was Purchased.</i>	<i>Why Prosecuted.</i>	<i>Final Disposition of Case.</i>
Baltimore.....	2071	The Cassidy Co.....	Oct. 4, 1911.....	Vinegar Misbranded; sold as Cider Vinegar.....	Excluded by Statute of Limitation.
Leonardtown.....	2171	Egerton Bros., guarantor for F. O. Morgan.....	Oct. 18, 1911.....	Vinegar sold as Cider Vinegar which was not such.....	Excluded by Statute of Limitation.
Reisterstown.....	2559	Egerton Bros., guarantor for Russell Bros.....	Dec. 4, 1911.....	Vinegar sold as Cider Vinegar which was not such.....	Excluded by Statute of Limitation.
Baltimore.....	2858	Jos. S. Fox.....	Jan. 29, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2888	Chr. F. Kurrle.....	Feb. 2, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2890	A. Bossert.....	Feb. 2, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2911	Moritz Pressprich.....	Feb. 7, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2912	Bernheimer Bros.....	Feb. 7, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2914	Bernheimer Bros.....	Feb. 7, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2926	Chas. A. Benson.....	Feb. 8, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.
Baltimore.....	2922	Wm. H. Simpson.....	Feb. 8, 1912.....	Excessive amount of preserva- tive in Hamburg Steak.....	Pending.

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW OF MARYLAND DURING 1912—Cont'd.

<i>City, Town, or County.</i>	<i>Lab. No.</i>	<i>Name of Defendant.</i>	<i>Date Sample Was Purchased.</i>	<i>Why Prosecuted.</i>	<i>Final Disposition of Case.</i>
Baltimore.....	2925	Morris A. Benesch.....	Feb. 8, 1912...	Excessive amount of preservative in Hamburg Steak.....	Pending.
Baltimore.....	2959	W. H. Simpson.....	Feb. 12, 1912...	Excessive amount of preservative in Hamburg Steak.....	Pending.
Baltimore.....	3263	Henry Kormann Co., guarantor for W. A. Steinwedel.....	June 4, 1912...	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3327	Geo. W. Joeckel.....	June 5, 1912...	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	3372	Henry Kormann Co., guarantor for W. F. Medill & Co.....	June 6, 1912...	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3407	A. E. Muse & Co.....	June 6, 1912...	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3360	A. E. Muse & Co.....	June 7, 1912...	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3361	Henry Kormann Co., guarantor for Edw. J. A. Strobel.....	June 6, 1912...	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3296	Geo. A. Fox.....	June 6, 1912...	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3336	C. L. P. Osbon.....	June 6, 1912...	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3338	C. L. P. Osbon.....	June 6, 1912...	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	3317	J. H. Blass.....	June 6, 1912...	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW OF MARYLAND DURING 1912—Cont'd.

<i>City, Town, or County.</i>	<i>Lab. No.</i>	<i>Name of Defendant.</i>	<i>Date Sample Was Purchased.</i>	<i>Why Prosecuted.</i>	<i>Final Disposition of Case.</i>
Baltimore.....	3412	Henry Kormann Co., guaran- tor for Quandt Bros.....	June 7, 1912..	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3390	Henry Kormann Co., guaran- tor for Edw. C. Lytle.....	June 7, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3454	Emile Lautebach.....	June 8, 1912..	Deficiency of Ferric Chloride in Tincture of Ferric Chloride...	Pending.
Baltimore.....	3448	Chas. W. McCaulley.....	June 8, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3416	Henry Kormann Co., guaran- tor for Phillip J. Boenning.....	June 10, 1912.....	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3433	Henry Kormann Co., guaran- tor for Fred. Denhard.....	June 10, 1912.....	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3551	Chas. Feick.....	June 11, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3529	Wm. PenseL.....	June 12, 1912.....	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3550	Albert H. Parlett.....	June 12, 1912.....	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	3548	Albert H. Parlett.....	June 12, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3600	Geo. H. Stuart.....	June 13, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride...	Pending.
Baltimore.....	3658	Henry Kormann Co., guaran- tor for Otto Schmidt.....	June 14, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride...	Pending.

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW OF MARYLAND DURING 1912—Cont'd.

<i>City, Town, or County.</i>	<i>Lab. No.</i>	<i>Name of Defendant.</i>	<i>Date Sample Was Purchased.</i>	<i>Why Prosecuted.</i>	<i>Final Disposition of Case.</i>
Baltimore.....	3660	Henry Kornmann Co., guaran- tor for Otto Schmidt.....	June 14, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3639	M. Perel.....	June 14, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Hagerstown.....	3731	Eakle & Young.....	June 19, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Hagerstown.....	3732	Eakle & Young.....	June 19, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	3791	D. A. Kaunmer.....	July 2, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Crisfield.....	4025	Dr. J. F. Somers.....	July 17, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Govanus.....	4116	H. H. Watebman.....	July 25, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	4091	Jno. M. Wiesel.....	July 23, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	4108	Jos. S. Feunell.....	July 24, 1912.....	Deficiency of Ferrons Iodide in Syrup of Ferrons Iodide.....	Pending.
Baltimore.....	4135	Henry Kornmann Co., guaran- tor for Wm. G. Buschman.....	July 25, 1912.....	Deficiency of Ferrons Iodide in Syrup of Ferrons Iodide.....	Pending.
Baltimore.....	4180	Mrs. J. M. Whitfield.....	Aug. 6, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	4220	Read Drug & Chemical Co., R. A. Nattaus, Mgr.....	Aug. 12, 1912.....	Deficiency of Ferrons Iodide in Syrup of Ferrons Iodide.....	Pending.
Baltimore.....	4235	Alfred Lapouraille.....	Aug. 12, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW OF MARYLAND DURING 1912.—Cont'd.

<i>City, Town, or County.</i>	<i>Lab. No.</i>	<i>Name of Defendant.</i>	<i>Date Sample Was Purchased.</i>	<i>Why Prosecuted.</i>	<i>Final Disposition of Case.</i>
Baltimore.....	4237	Henry Kornmann Co., guarantor for Alfred Lapourelle.....	Aug. 12, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	4287	Henry Kornmann Co., guarantor for Wm. A. Otto.....	Aug. 13, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	4286	Henry Kornmann Co., guarantor for Wm. A. Otto.....	Aug. 13, 1912.....	Deficiency of Ferrous Iodide in Syrup of Ferrous Iodide.....	Pending.
Baltimore.....	4288	Henry Kornmann Co., guarantor for Wm. A. Otto.....	Aug. 13, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Baltimore.....	4264	H. H. Watchman.....	Aug. 13, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	4281	C. F. Freyer.....	Aug. 13, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Millington.....	4472	Julian T. Powers.....	Sept. 17, 1912.....	Deficiency of Arsenic Trioxide in Fowler's Solution.....	Pending.
Millington.....	4471	Julian T. Powers.....	Sept. 17, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.
Baltimore.....	4480	Henry Kornmann Co.....	Sept. 23, 1912.....	Deficiency of Ferric Chloride in Tincture of Ferric Chloride.....	Pending.

Up to the present time it has not been possible to secure a trial in any of the 57 cases, but it is expected that ere long indictments will be forthcoming. It appears that the office of the State's Attorney for Baltimore City is overcrowded with criminal cases, which added to the limited number of assistants available, is the cause of the law's delay.

Of the four prosecution cases designated as pending in my 1911 report, 2 have never been brought to trial owing to the negligence of the then State's Attorney for Cecil County, while the remaining 2 have been settled; S. Seibert Davis of Boonsboro, Washington County, plead guilty to the charge of having sold Tincture of Iodine containing methyl alcohol and paid a fine of \$10 and costs. T. O. Jefferson of East New Market, Dorchester County, plead guilty to the charge of having sold Laudanum deficient in morphine and paid a fine of \$5 and costs.

That conditions have materially improved since my first annual report is evidenced by the fact that in 1911 out of 1796 samples analyzed 784 were found not to be in conformity with the law's requirements, whereas in 1912 but 318 out of a total of 1775 samples analyzed were found defective:

LIST OF FOODS AND DRUGS NOT PASSED DURING 1912.

Representation.

Cause for Rejection.

14 samples Extract of Lemon.....	Deficient in Oil of Lemon.
1 sample Extract of Almond.....	Deficient in Oil of Bitter Almond.
1 sample Extract of Strawberry....	Imitation Extract, artificially colored.
2 samples Extract of Raspberry....	Imitation Extract, artificially colored.
1 sample Extract of Orange.....	Deficient in Oil of Orange.
1 sample Essence of Peppermint..	Deficient in Oil of Peppermint.
4 samples Extract of Vanilla.....	Deficient in Vanilla Bean.
3 samples Extract of Vanilla.....	Fortified with Vanillin and Coumarin and artificially colored.
3 samples Extract of Vanilla.....	Artificially colored, which was not declared on the label.
69 samples Fowler's Solution.....	Deficient in Arsenic Trioxide.
18 samples Hamburg Steak.....	Contains Sulphites as Preservative.
2 samples Salad Oil.....	Cottonseed Oil, but Labeled Imported Olive Oil.
6 samples Salad Oil.....	Cottonseed Oil, but not so labeled.
2 samples Sweet Oil.....	Cottonseed Oil, but not so labeled.
6 samples Rice.....	Coated with Glucose and Talc, which was not declared on the label.
45 samples Syrup of Ferrous Iodide.	Deficiency of Ferrous Iodide.
97 samples Tinc. of Ferric Chloride..	Deficiency of Metallic Iron in form of Chloride.
21 samples Cider Vinegar.....	Deficient in Acetic Acid.
7 samples Cider Vinegar.....	Deficient in Total Solids.
11 samples Vinegar.....	Artificially Colored, which was not declared on the label.
1 sample Extract of Rose.....	Deficient in Oil of Rose.
2 samples Preserves.....	Deficient in Solids other than Sugar.
1 sample Jelly.....	Deficient in Solids other than Sugar.

During the past year 472 hearings were held for alleged violations of the law as follows: 79 in April, 33 in May, 81 in June, 146 in September, 76 in November and 57 in December.

The plan of visiting the various towns and villages of the State at irregular intervals for the purpose of general inspections of stores and manufacturing establishments was continued and during 1912 481 such trips were taken, enabling the Inspectors to make 5630 inspections as shown by the following lists:

LIST OF CITIES, TOWNS AND VILLAGES VISITED BY THE INSPECTORS IN 1912.

Annapolis (8 times), Antietam, Andersontown, American Corner, Arlington, Airey, Allibone, Abingdon, Aberdeen (4 times), Ashland (twice), Adamstown, Allen, Aldino, Arnolds, Ashton.

Brinklow, Brunswick (4 times); Belair (3 times), Berwyn (3 times), Branchville, Boonsboro, Beaver Creek, Betterton (twice), Berlin (3 times), Barton, Bladensburg (twice), Blakistone, Bellevue, Bozman, Beulah, Bethlehem, Bruceville, Bynum, Benson, Bradshaw, Berkeley, Belcamp, Barclay, Black, Brooklyn, Buckeystown, Brookview, Rivalve, Bishopville, Box Iron, Beaver Dam, Bealesville, Barnesville, Buck Lodge, Boyds, Brookville.

Cumberland (3 times), Cambridge (4 times), Chewsville, Cavetown, Cearfoss, Conococheague, Clearspring, Chesapeake City, Cecilton, Crumpton (twice), Chesterville, Chestertown, Crisfield (3 times), Chester, Centreville (3 times), Church Hill (twice), Concord, Covertown, Cordova (twice), Choptank, Cornersville, Church Creek, Creswell, Chestnut Hill, Clayton, Churchville, Carvel, Catonsville, Cockeysville (3 times), Curtis Bay, Clara, Cole's, Carson's Run, Camp Parole, Costen, Cedar Grove, Clarksburg, Corbett, Charlestown.

Deer Park, Dodds Corner, Denton (3 times), Downs, Dowling Corner, Darlington, Darnestown, Dawsonville, Damascus.

Ellicott City (3 times), Earlsville, Eadesville, Easton (3 times), Ellwood, East New Market, Emmorton, Elkridge, Eldorado, Eden, Elk Neck, Etchison, Emmittsburg, Eastport.

Frederick (10 times), Funkstown, Fairlee (twice), Frostburg, Federalsburg, Fowling Creek (twice), Forest Park, Fulford, Fountain Green, Fallston, Franklinsville, Fruitland, Fairmount, Frizzellburg.

Govans (3 times), Georgetown, Galena, Golt (twice), Goldsboro; Greensboro (3 times), Grove, Griffins, Glyndon, Girdletree, Germantown, Gaithersburg, Goshen.

Hagerstown (8 times), Hancock (3 times); Hayett, Havre de Grace (4 times), Hurlock, Hyattsville (twice), Hillsboro (twice), Henderson, Hobbs, Hampden, Hannon, Hickory, Harford Furnace, Hamilton, Hebron, Harold, Hopewell, Hempstead.

Ingleside, Ironshire.

James, Jerusalem, Joppa, Jarrettsville, Jesterville.

Keedysville (twice), Kennedysville, Kings Creek (twice), Kitzmiller'sville, Kalmia, Kingston, Kings Valley, Kensington.

Laurel (3 times), Leitersburg, Linterville, Lonaconing, Long Woods, Lloyds, Linkwood, Lambden, Lynch, Lauraville, Laytonsville, Layhill, Lutherville.

Maugansville, Mettaloiti, Marion (twice), Mountain Lake Park, Middleton, Millington (twice), Massay (twice), Marydel (twice), Milestone, Middletown, Myersville, McDaniel, Madison, Mount Washington, Medford, Mardella Springs, Malstou, Manikin, Marumseo, Middlebrook, Manchester, Mt. Airy, Monkton.

North East (5 times), Newton, Newbridge, New Windsor (twice), Nanticoke, Newark, Norbeck, Norwood.

Oakland, Oxford (twice), Ocean City (twice), Overlea, Odenton, Olney, Oakdale.

Perryville, Port Deposit (4 times), Pocomoke City (3 times), Princess Anne (twice), Pikesville, Preston (twice), Piney Grove, Poole, Price, Parsonburg, Pittsville, Powellsville, Perrymans (twice), Poolesville.

Queen Anne (twice), Queenstown, Quantico, Quaker Bottom, Quince Orchard.

Ringgold, Rock Hall (twice), Ruthberg, Ridgely (twice), Royal Oak, Roland Park, Rhodesville, Reeds Grove, Roberts, Rosedale, Rاسبurg, Reisterstown, Rocks, Riverton (twice), Rockawalking, Rehobeth, Rockville, Rocky Ridge.

Sparrows Point (twice), St. Helena, Smithsburg, Spickler, Sharpsburg, Sassafras, Still Pond (twice), Salisbury (3 times), Snow Hill (twice), Stevensville (twice), Sudlersville, St. Michaels, Sherwood, Secretary, Sharon (twice), Singer, Stafford, Stepney, Short Lane, Star, Sudlersville, Sharptown, Sandy Hill, Swamp Quarter, Silver Hill, St. Martin, Showell, Scarborough, Stockton, Sandy Spring, Snydersburg, Sykesville.

Towson (10 times), Two Johns (twice), Tunis Mills, Trappe (twice), Thurmont (twice), Tilghman, Tuckahoe, Thompson, Taylors Island, Templeville, Tulls Corner, Taneytown, Taylorsville.

Union Bridge (twice), Upper Falls, Uniontown.

Vienna, Vanbibber.

Williamsport (6 times), Westminster (7 times), Warwick, Wharton (twice), Westernport, Winchester (twice), Willoughby, Wye Mills (twice), Williston (twice), Woodberry, Williamsburg, Walkersville, Windy Hill, Woolford, Watervale, Wilna, Woodlawn, Woodsboro, White Haven, Willards, Weslyn Chapel, Webster, Whalesville, Weseley, Westover, Washington Grove, Wheatland, Windfield, Warfieldsburg, White Hall.

LIST OF INSPECTIONS MADE BY THE INSPECTORS IN 1912.

Bakeries.....	16
Special Inspections.....	4
General Stores.....	4,563
Markets.....	87
Crab Meat Packers.....	11
Bottling Establishments.....	18
Preserving Plants.....	2
Wharves.....	27
Oyster Dealers.....	363
Slaughter Houses.....	16
R. R. Produce Yard.....	1
Wagon Produce Yard.....	1
Salt Fish Packers.....	1
Creameries.....	3
Produce Commission Merchants.....	104
Breweries.....	10
Pickling Houses.....	7
Pure Food Creamery.....	1
Packing and Canning Houses...	335
Macaroni.....	60

Total.....5,630

These inspections have brought to light many insanitary conditions and surroundings in connection with the manufacture and sale of food products and the passage by our next Legislature of a strict sanitary inspection law covering factories, canneries, dairies, packing establishments, etc., is urgently needed.

The following list will show the character and quantity of food products and drugs destroyed by the inspectors during the past year.

CONDEMNATIONS OF FOOD PRODUCTS FROM JANUARY 1ST,

1912, TO JANUARY 1ST, 1913.

Hamburg Steak.....	10 Pounds.
Salad Oil.....	8 Bottles.
Currants.....	34 Pounds.
Catsup.....	21 Bottles.
Butter.....	2 Pounds.
Pickled Pig Heads.....	350 Pounds.
Baking Powder.....	24 Pounds.
Evaporated Peaches.....	125 Pounds.
Skinned Tomatoes.....	384 Pounds.
Golden Tincture.....	9 Bottles.
Celery Compound.....	2 Bottles.
Sweet Oil.....	33 Bottles.
Tomato Pulp.....	2 Cans.
Condensed Milk.....	447 Cans.
Shredded Fish.....	8 Pounds.
Prunes.....	13 Pounds.
Essence of Strawberry.....	10 Bottles.
Campbell's Salad Dressing.....	10 Bottles.
Lemons.....	3
Celery Chow Chow.....	14 Bottles.
Extract Wild Cherry.....	3 Bottles.
Bateman's Drops.....	7 Doz. Bottles.
Shad.....	9 Pounds.
Spirit of Camphor.....	6 Bottles.
Tincture of Iodine.....	5 Bottles.
Tincture of Arnica.....	2 Bottles.
Spirit of Nitre.....	7 Bottles.
Candy.....	25 Pounds.
Strawberries.....	12 Quarts.
Egg Plant.....	1
Fowler's Solution.....	3 Pints.
Syrup Iodine of Iron.....	½ Pint.
Extract of Orange.....	24 Bottles.
Extract of Rose.....	3 Bottles.
Extract of Lemon.....	25 Bottles.
Apples.....	3 Bushels.
Sweet Pickled Tomatoes.....	12 Bottles.
Chipped Beef.....	2 Jars.
Rolled Oats.....	2 Packages.
Pick-Me-Up.....	15 Bottles.
Sausage.....	6 Pounds.
Relish.....	6 Bottles.
Mustard.....	3 Doz. Bottles.
Rabbits.....	25
Bananas.....	105
Dried Apples.....	7 Packages.
Raisins.....	1 Pound.

I take the liberty of again calling the attention of the Board to a few proposed amendments to the Food and Drugs Law of Maryland, the adoption of which by the next Legislature appears to me very desirable.

First.—Provision should be made to permit trial of violators of the Food and Drugs Law before any justice of the peace in any county or city of the State of Maryland, who has jurisdiction to hear and determine ordinary misdemeanors. Such a provision would materially facilitate the enforcement of the law and save much valuable time.

Second.—Refusal to sell or deliver to a properly authorized officer or agent of the State any drug or food product for the purpose of analysis in the State laboratory should be made a penal offense.

Third.—While Section 140F of the Food and Drug Law provides that the standards of quality, purity and strength for foods or for drugs not already standardized by the United States Pharmacopoeia or National Formulary adopted by the U. S. Department of Agriculture prior to the enactment of our Food and Drug Law, shall be the standards of purity, quality and strength for such foods and drugs in the State of Maryland, it seems desirable to enumerate as a part of the law all standards adopted by the National Department of Agriculture up to the present time. Such action has been taken by the majority of States and retains the feature of agreement with the National standards, while simplifying the enforcement of the law at the same time.

Fourth.—An increase of the annual appropriation from \$15,000 to \$20,000 would enable this department to extend its activities more frequently to the various industries over the entire State, without curtailing in any way the support which must be given the Chemical Laboratory each year because of absence of special appropriation for that purpose.

Very truly yours,

CHAS. CASPARI, JR.,

State Food and Drug Commissioner.

BALTIMORE, February 1, 1913.

Report of the Bacteriologist.

WM. ROYAL STOKES, M. D., Bacteriologist.

Dr. John S. Fulton,

*Secretary State Department of Health,
Baltimore, Md.*

Dear Sir: I hereby respectfully report upon the work performed in the bacteriological laboratory during the year 1912. Table No. 1 shows that there were 3,454 examinations made for the physicians of the State for the purpose of aiding them in detecting the presence of the various communicable diseases. This shows an increase over 1911, when 3,301 examinations for such conditions were made. The total number of laboratory tests made during the year was 4,602 and this is an increase over last year when 4,219 tests were made. The work in detail consisted of 1,233 specimens examined for tuberculosis, 1,193 for typhoid fever, 696 for diphtheria, 275 for malaria, and 57 miscellaneous examinations. The work in detail together with examinations of water, milk and oysters is set forth in Table No. 1 which follows:

TABLE NO. 1.

EXAMINATIONS FOR PHYSICIANS FOR THE DETECTION OF DISEASES AND INSANITARY CONDITIONS.

	<i>Positive.</i>	<i>Negative</i>	<i>Sus- picious.</i>	<i>Unsatis- factory.</i>	<i>Total.</i>
Typhoid Fever.....	402	718	61	12	1193
Malaria.....	10	184	1	80	275
Tuberculosis.....	318	903	3	9	1233
Diphtheria.....	202	489	2	3	696
Miscellaneous.....	...	...	..	..	57
Examination of Water. ...	...	...	..	..	921
Examination of Milk.. ...	...	...	..	..	117
Examinat's of Oysters. ...	...	...	..	..	110

Total Number of Examinations.....4602

BACTERIOLOGICAL EXAMINATION OF THE WATER SUPPLIES OF THE STATE.

During the year we have made a bacteriological examination of 32 specimens of surface water supplying cities, towns, villages and rural habitations. We have arranged these into dif-

ferent groups according to the number of bacteria present in 1 cubic centimeter, and we have also noted the comparative percentage of colon bacilli present and absent in each group according to the number of bacteria present. The results of this classification are as follows: In surface waters containing from 1 to 500 bacteria per c. c. the colon bacillus was present 4 times in 1 or 10 c. c. of water and absent 5 times, a percentage, respectively, of 45 and 55; from 500 to 1000 bacteria per cubic centimeter the colon bacillus was present twice and absent in one specimen, a percentage of 67 and 33, respectively; from 1000 to 5000 the colon bacillus was present 16 times and absent once, a percentage of 94 and 6, respectively; and in water over 5000 bacteria per c. c. the colon bacillus was present 3 times and absent in none, thus giving 100 per cent. of positive results. Although based upon a small number of examinations in certain instances, yet this table seems to show that the higher the bacterial count the greater is the percentage of positive tests for the colon or intestinal bacillus. These results also show that the colon bacillus, an evidence of intestinal pollution, was detected in 78 per cent. of the specimens of surface drinking water examined throughout the State.

EXAMINATION OF PUMPS, WELLS AND SPRINGS.

During the year we made 659 examinations of water from pumps, wells and springs. We have classified our results in the same way as that pursued for the surface water. In pumps, wells and springs containing from 1 to 500 bacteria per c. c. the colon bacillus was present 256 times and absent 98 times, a percentage of 72 and 28, respectively; in water ranging from 500 to 1000 in 120 examinations the colon bacillus was present 86 times and absent 34 times, a percentage of 71 and 29, respectively; in 158 examinations ranging between 1000 and 5000 bacteria per c. c. the colon bacillus was present 125 times and absent 33 times, a percentage of 79 and 21, respectively; in 22 specimens containing over 5000 bacteria per c. c. the colon bacillus was found 20 times and not found in two instances, a percentage of 91 and 9, respectively; and in 5 specimens in which no count was made the colon bacillus was present 3 times and absent twice, showing 60 and 40 per cent., respectively. This shows that in 659 specimens from pumps, wells and springs the colon bacillus was found in 490 examinations and was absent in 169, a percentage of 74 and 26, respectively.

There were 19 specimens examined which were sent to the local health officers, the bottles simply being marked by a num-

ber which was known to the health officer. Fourteen of these specimens contained the colon bacillus and 5 were free from this organism; 8 of these varied between 1 and 500, 3 between 500 and 1000, and 8 were over 1000.

Two of the glass bottles containing specimens submitted for examination were broken in transit.

There were 86 artesian wells examined. In specimens varying between 1 and 500 there were 14 showing the presence of the colon bacillus and 43 which were negative; from 500 to 1000 we examined 9 specimens, two of these showing the presence of the colon bacillus; and in 19 specimens over 1000 bacteria per c. c. the colon bacillus was present in 9 instances. In one instance in which the colon bacillus was present no count was made.

There were 33 examinations made from the various filtration plants and the colon bacillus was present in 19 specimens and absent in 14. In specimens showing a bacterial count between 1 and 500 the colon bacillus was present in 7 cases or 39 per cent., and absent in 11 or 61 per cent.; in specimens showing a bacterial count between 500 and 1000 the colon bacillus was present in 1 instance and absent in one; in specimens between 1000 and 5000 bacteria per cubic centimeter the colon bacillus was present 7 times and absent twice, a percentage of 72 and 28, respectively. In 4 specimens having a count over 5000 the colon bacillus was present in every instance.

We made 5 examinations of specimens of table waters, of which 2 were bad, 2 good and 1 suspicious. These were reported to the Commissioner of Pure Foods and Drugs, Dr. Charles Caspari.

Five special examinations were made, two of which contained the colon bacillus.

We made 9 examinations of cisterns for various citizens. Of these 5 showed intestinal pollution and 4 were good.

We also made 71 examinations of the Potomac River water and 110 examinations of the oysters from oyster beds in connection with the investigation of the river on account of the alleged pollution of this water. This work was done in cooperation with the other members of the Commission appointed by the Secretary of the U. S. Department of Agriculture, the Governor of Virginia and the Governor of Maryland. The work was not completed during 1912, so this part of it will be described in detail when the entire report is issued.

EXAMINATION OF INDIVIDUAL WATER SUPPLIES.

A large number of examinations have been made from the water supplies of various cities and towns of the State, and these reports have been sent to the local health officers, to practicing physicians and to the Bureau of Sanitary Engineering. The bacteriological examination consists in the estimation of the bacteria per cubic centimeter and the presence of the colon bacillus in 0.1, 1 and 10 c. c. of water. If the colon bacillus was found in any of these quantities of water, the water is called bad. If there are over 300 bacteria per c. c. for well water or over 1000 bacteria for surface waters the condition is regarded as suspicious, but no waters are condemned unless the colon bacillus is detected in the sample. The results of these examinations are recorded below in alphabetical order:

- Aberdeen—One artesian well good, two wells bad.
- Annapolis—Two wells bad, one spring good.
- Annapolis Junction—One well good and one well bad.
- Arlington—Two artesian wells bad, two wells good and four wells bad.
- Araby—One well bad.
- Barnesville—Two sources not stated bad.
- Barstow—One well good and one well bad.
- Bay Ridge—One driven well good.
- Bear Creek—One driven well good.
- Belair—One well bad.
- Bella Vista—One spring bad.
- Bengies—Two wells bad and one well good.
- Bentley Springs—One spring good.
- Bethesda—Two wells bad and two wells good.
- Birdsville—One spring bad.
- Bladensburg—One well bad.
- Blue Ridge—One well bad.
- Boring—One well good.
- Bradshaw—Two springs good, one spring bad; three wells good and four wells bad.
- Brentwood—One driven well good, 11 wells bad; one spring good and one spring bad.
- Brooklandwood—One spring bad and one spring good.
- Buckeystown—Two springs bad, one spring good, and four wells bad.
- Burkittsville—Two springs good and six wells bad.
- Bush River—Three springs bad, one well good, and one artesian well good.
- Cambridge—Six artesian well examinations bad and four artesian well examinations good. All examinations from same well. Nine wells bad.
- Cascade—One artesian well good.
- Catonsville—Four wells bad, two wells good; two springs bad, one water company bad.
- Charlestown—One well bad.
- Chase—Seven wells bad and three wells good.
- Chevy Chase—One well good.
- Childs—One well bad.
- Cockeysville—Four wells bad and two wells good.
- Colgate Creek—One driven well bad.
- Colgate Park—One artesian well good.
- College Park—One well bad and one well good.
- Crisfield—One driven well bad and one general supply bad.

- Croom—Three wells bad and one well good.
Crownsville—One well good, one well bad, one artesian well good, two artesian wells bad; three driven wells bad, and one spring bad.
Cumberland—Two wells and two springs bad; one Evitt Creek good and one Evitt Creek bad; one Dickens Run bad, and one cistern bad.
Curtis Bay—One spring bad and one spring good.
Darlington—One bored well good.
Deal's Island—One deep well bad.
Detour—One artesian well bad.
Dorchester Heights—One well bad.
Dunkirk—One well bad.
Earleigh Heights—One well bad.
Eastport—One artesian well bad, one artesian well good; one driven well bad, three wells good and two wells bad.
Elk Ridge—One spring good.
Elkton—Two wells good, three wells bad and one public supply bad.
Ellicott City—One artesian well good, spigot and gate valve from same good; one spring bad and pipe from same bad, spigot bad; two wells bad; one city supply bad, and one reservoir bad.
Elvaton—One artesian well good.
Forest Park—Two wells bad.
Frederick—Two artesian wells good, two artesian wells bad; three creek samples bad, one spring bad, and three wells bad.
Friendsville—Four wells bad.
Galena—One well bad, one spring good, and two springs bad.
Garrett Park—One driven well bad.
Garrison—One artesian well good, one well good and one well bad.
Germantown—Two wells bad.
Gittings—One spring bad.
Glencoe—Two wells good, one well bad; one spring good, two springs bad, and one artesian well good.
Glyndon—One well good and one well bad.
Govanstown—One artesian well bad, one drilled well bad; four wells bad and one well good.
Hagerstown—One well bad; three springs bad, two springs good; three city waters bad; three waters from sedimentation tank at filtration plant bad; seven filtered waters bad and two filtered waters good; four Antietam Creek waters bad.
Hamilton—One well bad.
Havre de Grace—Two wells good, two filtered waters good and two raw waters bad.
Highfield—Four wells bad.
Hyattsville—One well good, one well bad, and one public supply bad.
Ijamsville—One artesian well good.
Irvington—One well bad.
Jessups—One stream bad, two spigots bad, and one reservoir bad.
Jones Station—One well bad.
Keedysville—Four wells bad, one cistern good, and one cistern bad.
Kennedyville—One well bad.
Kitzmillersville—Four wells good, two wells bad; one driven well good and one spring good.
Landover—Four wells bad and two wells good.
Lansdowne—Two wells bad and one well good.
La Plata—Three wells bad and one well good.
Lauraville—Four wells bad.
Lawyers' Hill—One spring bad.
Loch Raven—Two springs bad and two springs good.
Lutherville—Four wells bad.
Maryland Line—One well good.
Massey—One well good.

- Melvale—One artesian well good and two springs bad.
Middle River—One well good and one well bad.
Millersville—Four wells bad, one well good; one spring bad and one spring good.
Monkton—One well bad and two wells good.
Monrovia—One spring good and one well good.
Morrell Park—Three wells bad.
Mt. Rainier—Seven wells good, twelve wells bad; two springs good, one drilled well bad, one drilled well good, and one artesian well good.
Mt. Washington—Two wells bad and one supply good.
Myersville—One well bad.
North Keys—One well bad and one well good.
Oakwood—One artesian well good.
Olney—Two wells bad.
Orangeville—Baltimore Co. Water Co.—two specimens bad and two wells bad.
Owings Mills—Two wells bad.
Oxford—One well bad and one well good.
Parkton—One well good, two wells bad, and one artesian well good.
Perryman—One well good.
Pikesville—Two wells good, nine wells bad; four artesian wells good, four artesian wells bad; three springs bad and three streams bad.
Pimlico—One well bad.
Phoenix—Three wells good.
Prince Frederick—One well bad and one spring good.
Pocomoke City—One well bad.
Port Deposit—Three springs good, one spring bad, and one reservoir good.
Princess Anne—One well bad.
Raspburg—Eleven wells bad.
Reisterstown—Two springs bad and two wells bad.
Rider—One artesian well good.
Riverdale—One well good and one well bad.
Rockville—One well bad and one well good.
Rock Hall—One spring bad.
Rogers Station—One spring bad.
Roland Park—One artesian well good, one driven well good, and one spring good.
Rolling Road—One bored well good.
Roslyn—One well good.
Rossville—One well bad.
Round Bay—One artesian well good and one well bad.
Ruxton—Two artesian wells bad, one spring bad and one spring good.
St. George—One well bad.
Salisbury—One driven well good.
Sandy Spring—One well bad.
Sharpsburg—One spring good.
Silver Spring—Two wells bad.
Smithsburg—One cistern bad.
Sparrow's Point—One well bad and one spring bad.
Sudbrook Park—Two springs bad and one artesian well good.
Sunderland—One well bad.
Sykesville—Three wells good and one well bad.
Texas—Two wells bad, two springs good and one spring bad.
Thurmont—Two wells good and nineteen wells bad; public water supply (intake) good, and spigot good.

Towson—Four springs bad, one spring good; one artesian well good; three Baltimore Co. supply bad and sixteen good; one bad cooler in Court House and one bad spigot in Court House; five wells good and 138 bad.

Trappe—Three wells bad, one artesian well good, one artesian well bad and one spring bad.

Turner's Station—One well good.

Union Bridge—Water Company—One artesian well bad, four artesian wells good, one reservoir bad, two general supply bad and two good; one dug well bad and one good.

Uniontown—One spring bad and one cistern bad.

Upper Marlboro—One well bad.

Warren—One spring bad.

Washington Road—One well bad.

Waterbury—One well bad, one well good, and one artesian well good.

Welhems—One driven well good.

Westernport—Savage River, Piedmont Water Co.—One sample bad.

Westport—One well good.

Westminster—Westminster Water supply—four springs bad, two streams bad, one well bad. General supply, tap samples—two bad and two good. One well bad, one spring bad, and two artesian wells bad.

White Hall—Two wells bad.

Wilna—One well bad.

Woodbine—One well bad and one well good.

Woodbrook—One well good.

Woodlawn Station—One artesian well good.

Woodstock—Two wells bad, one well good, and one artesian well good.

Worton—Four wells bad, one spring bad, and one driven well bad.

Zion (North East)—One well bad and one well good.

THE PRESENT CONDITION OF THE VARIOUS WATER SUPPLIES OF MARYLAND.

Although the investigations made during the past year have not included all of the water supplies of the State, yet the results which have been obtained from those which were examined show that a great many of the sources of supply are contaminated. As stated above 74 per cent. of the specimens examined from 659 pumps, wells and springs was found to contain the colon or intestinal bacillus and would be ranked as contaminated waters. These conditions have been reported through the Bureau of Chemistry and the Bureau of Sanitary Engineering to the local health officers or other interested parties, but it is difficult to say just how many of the various insanitary conditions causing these conditions have been permanently remedied.

Even the artesian wells at times are not free from pollution, as our results show that in 86 artesian wells examined there were 25 or 29 per cent. contaminated by intestinal pollution. The examination of certain filter plants throughout the State also shows that in 33 instances the colon bacillus was present in 19 specimens; but of course these infrequent ex-

aminations are not sufficient to decide as to the sanitary inefficiency of a filtration plant.

It might be well also to call special attention to the results of the examinations of the waters throughout the State which are presented above alphabetically. The number of bad wells in smaller towns can be seen at a glance, but there are also special conditions which might be noted. Among these may be mentioned nine wells bad at Cambridge; four wells and two springs bad at Catonsville; seven wells bad at Chase; four wells bad at Cockeysville; two wells, two springs and two creeks bad at Cumberland; several specimens from the city supply and wells of Ellicott City bad; three creek samples and three wells bad at Frederick; four wells bad at Govanstown; several springs and specimens from the city supply bad at Hagerstown; four wells bad at Lutherville; twelve wells bad at Mt. Rainier; two wells bad at Mt. Washington; nine wells bad and four artesian wells bad at Pikesville; nineteen wells bad at Thurmont; three wells bad at Trappe; two specimens of general supply bad at Union Bridge; four springs, two streams and two samples from the general supply bad at Westminster; and four wells bad at Worton.

The condition of the wells at Towson deserves a special comment since 138 wells were bad and only five wells were good. These examinations were made in connection with the recent outbreak of typhoid fever at Towson and the measures taken for remedying this condition will doubtless be described by other Bureaus.

BACTERIOLOGICAL EXAMINATION OF MILK.

The bacteriological laboratory made 117 examinations of various specimens of milk throughout the State, and of these 78 were classified as good and 39 as bad. The specimens of milk designated as good contained 500,000 bacteria per cubic centimeter or less, and those classified as bad contained more than 500,000 bacteria per cubic centimeter.

In order to obtain an idea of the general condition of the milk supply of the State according to localities, we have classified the milk according to the classification mentioned above into good and bad specimens which have been obtained from the various localities. The results of our examinations are as follows:

Cumberland—One specimen bad.

Elkton—Three specimens good.

Elk Mills—Two specimens good.

Ellicott City—One specimen good.

Frederick—Two specimens good and two bad.

Goldsboro—One specimen good.

Hagerstown—Sixteen specimens good and fourteen bad.
 Hyattsville—One specimen good.
 Kennedyville—One specimen bad.
 Lutherville—One specimen good.
 Mt. Rainier—Two specimens bad and two good.
 Princess Anne—One specimen bad.
 Riverdale—One specimen bad.
 Roland Park—One specimen bad and one good.
 Sparrow's Point—Two specimens bad and ten good.
 Westminster—Eight specimens bad and fifteen good.
 Towson—Four specimens bad and sixteen good.

EXAMINATION OF DISINFECTANTS.

The laboratory during the year has also made seven complete analyses of various samples of disinfectants in order to determine the Rideal-Walker coefficient.

THE USE OF ANTITYPHOID VACCINE FOR THE PREVENTION OF TYPHOID FEVER.

During the year of 1912 the bacteriological laboratory of the State Department of Health prepared and distributed 1917 complete immunizing doses (3 ampules each) of antityphoid vaccine. Of this number 1437 doses were used to immunize inmates and attendants in various public institutions throughout the State and 480 were distributed to private citizens. The distribution of the vaccine was as follows:

	<i>Date.</i>	<i>No. Doses.</i>
Springfield State Hospital, Sykesville.....	June 14	400
Springfield State Hospital, Sykesville.....	Sept. 20	175
Maryland House of Correction, Jessups....	July 16	700
Cambridge Hospital, Cambridge.....	Aug. 1	20
Cambridge Hospital, Cambridge.....	Aug. 14	12
Industrial Home for Colored Girls, Melvale.....	Aug. 31	50
Industrial Home for Colored Girls, Melvale.....	Sept. 3	60
Washington County Hospital, Hagerstown..	Dec. 10	20
Private citizens throughout the State.....		480
Total.....		1917

During 1912 the Springfield Hospital at Sykesville used the vaccine for immunizing all of the inmates and not one case of typhoid fever developed amongst those inoculated. One case of typhoid fever did develop later in the year, but this patient had not received the preventive inoculation of antityphoid vaccine.

In conclusion I desire to express my appreciation of the work of Dr. H. W. Stoner and Arnold Gunther, and to thank Miss L. R. Sullivan for careful work as Bureau Secretary.

Respectfully submitted,

WM. ROYAL STOKES,
 Chief Bureau of Bacteriology.

Chemist's Report.

W. B. D. PENNIMAN, Chief Chemist.

BALTIMORE, May 16, 1913.

Dr. John S. Fulton,

*Secretary State Department of Health,
Baltimore, Md.*

Dear Sir: Below you will find the list of analyses made by the Bureau of Chemistry for the year 1912. This list comprises the work done by the Bureau from samples which were sent to us by the Food and Drug Commissioner and the various Bureaus of the Department as well as the health officers throughout the State. There were also a number of samples from other Bureaus which were taken up for information, in anticipation of work that we will be called upon to do, and which are not reported on the list below.

The investigating work during the year 1912 has largely been in connection with the food products. We have followed the rule laid down by the counsel of the board, that in addition to the information obtained from the Bureau of Chemistry of the National Government fundamental data regarding all methods must be obtained in this laboratory as a necessary preliminary to prosecution.

The claim is often made that certain materials, particularly drugs, change their composition on standing in the stores of the druggists or merchants. These claims may in some cases have some truth in them, though often they are ridiculous. We have prepared considerable quantities of a number of food and drug products, which we are analyzing at intervals, to ascertain what effect time has upon the composition of the substances, in order to meet this contention in court. In some cases this work has been going on for several years, and the information obtained will doubtless be of great value. We find, in general, that the composition of some of these materials does change, but these changes are so slight that they do not seriously effect the results of the analysis.

Experimental work has been done on jams, jellies, lard, vanilla, lemon and orange extracts, edible oils, butter and its

substitute. Special work has also been done on vinegar, in connection with the work of the Department of Agriculture, and our work has been duly published by the Government. Some preliminary work has also been done on fresh meat, and the changes it undergoes in storage.

On account of the active work of the new Bureau of Sanitary Engineering, and investigations now going on of the oyster beds in the Potomac River, our methods of water analysis have been extended, and new methods devised for these particular investigations.

Special reports were made on the water supply of Havre de Grace, Maryland, from the year 1905 to 1911, on the food furnished at the Maryland House of Correction, ventilation at the Maryland House of Correction, samples of food from the British Steamship "Daylight" (made at the request of the British Consul), special reports on the water supply of Glen Echo, Maryland, and on the dust nuisance at the cement mill at Union Bridge, Maryland.

The work of the Bureau has increased very much during the year, and the demands upon it are so great that I hope due consideration will be given its needs. The force should be increased, so that more work and a larger variety can be undertaken.

DRUGS.

Tincture of iron found to be good.....	306 samples.
Tincture of iron below the limits.....	156 samples.
Tincture of iron for information.....	21 samples.
Tincture of iron check analysis.....	166 samples.
Fowler's solution found to be good.....	320 samples.
Fowler's solution below the limits.....	120 samples.
Fowler's solution for information.....	2 samples.
Fowler's solution check analysis.....	106 samples.
Lime waters found to be good.....	21 samples.
Lime waters below the limits.....	5 samples.
Lime waters check analysis.....	9 samples.
Syrup iodide of iron found to be good.....	333 samples.
Syrup iodide of iron below the limits.....	65 samples.
Syrup iodide of iron for information.....	9 samples.
Syrup iodide of iron check analysis.....	79 samples.
Spirits of camphor found to be good.....	1 sample.
Rheumatic remedy for information.....	1 sample.
Squibbs Mixture for information.....	1 sample.
Disinfectants.....	6 samples.

FOODS.

Lards found to be good.....	77 samples.
Lards below the limits.....	6 samples.
Lards for information.....	1 sample.
Soda water flavors found to be good.....	3 samples.
Evaporated skin milk for information.....	1 sample.

Milks found to be good.....	39 samples.
Milks below the limits.....	27 samples.
Milks for information.....	2 samples.
Butters found to be good.....	116 samples.
Butters for information.....	1 sample.
Butterine found to be good.....	1 sample.
Rice found to be good.....	3 samples.
Rice below the limits.....	6 samples.
Hamburg steaks found to be good.....	69 samples.
Hamburg steaks below the limits.....	24 samples.
Hamburg steaks for information.....	7 samples.
Hamburg steaks check analysis.....	27 samples.
Jellies found to be good.....	11 samples.
Jellies below the limits.....	1 sample.
Preserves found to be good.....	7 samples.
Preserves below the limits.....	1 sample.
Corn syrup and honey found to be good.....	1 sample.
Salad oils below the limits.....	8 samples.
Sweet oils below the limits.....	2 samples.
Olive oil found to be good.....	5 samples.
Vinegars found to be good.....	44 samples.
Vinegars found to be bad.....	12 samples.
Vinegars below the standard.....	28 samples.
Vinegars for information.....	3 samples.
Vinegars check analysis.....	31 samples.
Extract of strawberry below the limits.....	1 sample.
Extract of almond below the limits.....	1 sample.
Essence peppermint found to be good.....	3 samples.
Essence peppermint below the limits.....	1 sample.
Extract of raspberry below the limits.....	2 samples.
Extract of rose below the limits.....	1 sample.
Extract of rose for information.....	1 sample.
Extract of orange found to be good.....	10 samples.
Extract of orange below the limits.....	1 sample.
Extract of lemon found to be good.....	26 samples.
Extract of lemon below the limits.....	15 samples.
Extract of lemon for information.....	1 sample.
Extract of vanilla found to be good.....	34 samples.
Extract of vanilla below the limits.....	14 samples.
Extract of vanilla for information.....	2 samples.
Cherries found to be good.....	21 samples.
Cherries below the limits.....	2 samples.
Cherries check analysis.....	5 samples.
Ice cream found to be good.....	1 sample.
Ice cream check analysis.....	1 sample.

MISCELLANEOUS.

Condimentine for information.....	1 sample.
Bitter wine of iron for information.....	1 sample.
Horse radish and beets for information.....	1 sample.

WATERS.

Waters found to be good.....	169 samples.
Waters found to be bad.....	489 samples.
Waters found to be fair.....	3 samples.
Waters found to be suspicious.....	29 samples.
Mineral waters.....	6 samples.
Potomac river waters.....	62 samples.

Total.....3191 analyses.

WATER INSPECTION.

Westminster Water Supply, Westminster, Carroll County, Md.

Patapsco Manor Sanitorium, Ellicott City, Howard County, Md.

Baltimore Manual Labor School, Halethorpe, Baltimore County, Md.

James B. Clark, Ellicott City, Howard County, Md.

Brentwood Water Supply, Brentwood, Prince George County, Md.

Washington County Water Co., Hagerstown, Washington County, Md.

J. T. Haxall, Garrison P. O., Baltimore County, Md.

Union Bridge Water Supply, Union Bridge, Carroll County, Md.

Special investigation of the water supply of the Young Women's Christian Association, Rehoboth Beach, Delaware.

Mrs. N. B. Crenshaw, Govans, Baltimore County, Md.

Mr. John McHenry, Pikesville, Baltimore County, Md.

Senator Isidor Rayner, Cambridge, Dorchester County, Md.

Mr. Wm. H. Thayer, Woodlawn P. O., Baltimore County, Md.

Mr. Henry Long, 3716 Forest Park Ave., Forest Park, Md.

Maryland House of Correction, Jessups, Anne Arundel County, Md.

Mr. Walter Sondheim, Pikesville, Baltimore County, Md.

Towson Water and Milk Supply, Towson, Baltimore County, Md.

Mountain Rock Spring Water Company, Grant Street, Govans, Baltimore County, Md.

Mt. Rainier Water Supply, Mt. Rainier, Prince George County, Md.

Dr. H. F. Shipley, Granite, Baltimore County, Md.

Very truly yours,

W. B. D. PENNIMAN,
Chief Bureau of Chemistry.

Report of the Bureau of Vital Statistics.

FREDERIC V. BEITLER, Chief.

BALTIMORE, JUNE 7, 1913.

Dr. John S. Fulton,

*Secretary State Department of Health,
Baltimore, Md.*

Sir: I herewith respectfully submit a resume of the work of the Bureau of Vital Statistics for the year of 1912, along with several recommendations which I think are urgent not only for the welfare of this Bureau, but which have a most direct bearing upon all the other work participated in by the State Department of Health.

The early months of the year 1912 were given almost entirely to legislative efforts and as a result of the effort which has been expended and through the staunch help of various physicians and citizens as well as certain members of the Legislature of this year, we were able to have passed as an amendment to the old Registration Law, a new Registration Law which extended to the State Board of Health much greater power in the enforcement of the registration of vital statistics.

Along with the extension of their powers, the amendment provided for the institution of a central system of registration which places directly under the supervision of this Bureau the individual units in the registration of vital statistics throughout the State of Maryland.

Another important provision which we were enabled to have passed was an amendment to the Midwifery Law which up to this time was left without provision for penalties for violation of the Act on account of the unusual phraseology of the penalty section.

By virtue of these amendments to Article 43 of the Code of Public General Laws, this Bureau in so far as the registration of vital statistics and of midwives is concerned, is now on a substantial legal basis. I think it would be too much to expect perfect registration in too short a time since physicians, midwives, etc., enjoyed an immunity from penalties for neglecting to report births under the old law which has engendered a spirit

of carelessness or neglect which will take a long time to overcome. However, without any prosecutions the registration of both births and deaths has shown an increase since the institution of these new laws.

The provisions of the new law necessitated changing the entire system of registration which had been in use up to that time. For purposes of convenience to the citizens and for the purpose of aiding the registration of vital statistics, the entire State was divided into a number of registration districts. These districts correspond to a certain measure to the various legislative districts throughout the State but wherever we could combine one or more legislative districts particularly in and around large cities or towns, more especially to which there were a number of good roads, we would include them in one registration district.

According to our division of the State into registration districts we now have 240 separate registration districts. In all districts, except four, we have appointed and qualified as a State's officer, a local registrar of vital statistics; and in all except 27, we have deputies appointed, but there still remain 46 to qualify as State's officers.

In order to be able to properly inform all persons who are acting as registration officers, or upon whom this law imposes some duty, this Bureau has devised and published pamphlets giving the various reasons for and the value of the registration of vital statistics, a section upon the duties of local registrars, deputy local registrars, physicians, midwives, undertakers, etc., and a third section, giving a revised international classification of the causes of death, along with a list of undesirable terms. Subsequently, another pamphlet was issued as a directory to the local registrars and deputy local registrars throughout the State. All physicians, midwives and undertakers were circularized being informed in a circular of all the changes in the old law and with directions for properly reporting births and deaths under the provisions of the amendment.

The impetus which this gave registration was marked from the start. Since our death returns have been 90% we did not expect to see a great increase in these returns. However, there was a perceptible increase after July 1st, enough in fact to raise the total increase of the returns for the year 1912 of 2.73% over the year 1911.

The most marked increase, of course, was in the return of births. During the early part of August when the returns for July were due we not only received a rather full set of birth

returns for the month of July but several hundred miscellaneous certificates reaching back over a period of nearly one year. The increase of births for 1912 over those for 1911 was 25.26% the majority of this increase occurring after July 1, 1912. Of the 13229 births which were reported during the year, 5765 were reported for the first six months and 7464 for the second six months.

During the year this Bureau was directed by the Secretary to enter its exhibit as a portion of an exhibit of the State Department of Health at the Library Building of the Medical and Chirurgical Faculty of this State. The Bureau was allowed \$50 and established with this a foundation for a permanent exhibit to be used as occasion arises.

About July, 1912, upon further instruction from the Secretary, I added to the small exhibit which we had constructed earlier in the season, for the purpose of entering in as concrete a form as possible, the result of our work in vital statistics at the Fifteenth International Congress on Hygiene and Demography. Both for lack of space and lack of funds, I was unable to construct and present an exhibit as elaborate as I should have liked. The decision of the Committee of Awards however was very gratifying and encouraging since this Bureau received a diploma of honorable mention which was as high an award as was received by any exhibitor.

There are several recommendations which I feel it necessary to make to you for the furtherance of the work of this Department. First, the need of an inspector or inspectors specially trained in the *modus operandi* of the Registration Law who can go into the various registration districts and adjust such matters as this Bureau points out to him, and who will be able to investigate suspected violations and obtain such data as is necessary for successful adjustment or prosecution in such cases.

At present it is a hard matter in certain districts to have local or deputy local registrars report violations, particularly of physicians with whom their relations have been pleasant for in some instances, a life time, and besides there is very little compensation attached to the office of the ordinary local or deputy local registrar of vital statistics, not enough I should say, to have a man report his neighbor; and regardless of fees it will be sometime before we can educate local and deputy local registrars to realize the importance of this work.

The second recommendation which I must make to you is a recommendation for the provision for a fund for public instruc-

tion. The sooner we can teach the citizens of this State the necessity of the registration of births and deaths, the sooner will we overcome automatically all the objections raised by physicians, undertakers or other persons who constantly complain of the inconvenience imposed upon them by the Registration Law.

There are now several novel ways of appealing to the public; perhaps the best and most efficient one is through the moving picture parlor. There are several very vivid reels now on the market which set forth rather clearly the value of vital statistics, which, if they were purchased I am sure could be exhibited without cost.

In conclusion, I would state that while the greater portion of this year has been consumed in reconstructing the registration system and while our registration is not perfect, the result both in actual increase in registration and in the better spirit demonstrated throughout the State, we should look for a larger registration year in 1913.

Very respectfully,

FREDERIC V. BEITLER,
Chief Bureau Vital Statistics.

Report of the Bureau of Communicable Diseases.

MARCH 10th, 1913.

Dr. John S. Fulton,

*Secretary State Department of Health,
Baltimore, Md.*

Dear Dr. Fulton: I respectfully submit herewith the report of the Bureau of Communicable Diseases for the year 1912:

INFECTIOUS DISEASE STATISTICS, 1912.

The following paragraphs constitute the editorial foreword to that section of the annual report entitled "Mortality and Morbidity Statistics, 1912: A Summary." These statistics contain a reasonably clear and concise statement of the prevalence of communicable diseases in the counties of Maryland (the entire State of Maryland, exclusive of Baltimore City) for the calendar year 1912.

These figures, originally gleaned from the "Health Officers' Bulletin," it will be noted, do not correspond as closely as formerly to those of the previous year (1911), when the total number of deaths from communicable diseases was 2,192; in 1912 this number has decreased to 1,844. The following is a detailed statement of these deaths, arranged in the order of numerical importance, with comparative statistics for 1911, 1910, 1909 and 1908.

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND, FOR 1912, 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>Year of 1912</i>	<i>Year of 1911</i>	<i>Year of 1910</i>	<i>Year of 1909</i>	<i>Year of 1908</i>
Tuberculosis.....	1045	1124	1076	1118	1069
Typhoid Fever.....	229	349	309	294	350
Whooping Cough.....	111	168	220	118	103
Diphtheria.....	108	95	105	89	120
Influenza.....	103	194	166	179	260
Meningitis.....	90	63	79	94	77
Septicemia.....	42	63	55	42	38
Acute Dysentery.....	30	0	0	0	0
Measles.....	20	45	37	79	63
Malaria.....	16	10	16	19	11
Anterior Poliomyelitis.....	16	22	30	0	0
Erysipelas.....	16	23	24	17	12
Scarlet Fever.....	11	22	22	21	28
Pellagra.....	5	6	4	1	0
Mumps*.....	1	4	1	0	1
Purulent Conjunctivitis**...	1	0	0	1	0
Chickenpox.....	0	3	2	3	2
German Measles.....	0	0	0	0	1
Impetigo Contagiosa.....	0	1	0	0	0
Anthrax.....	0	0	1	0	0
Actinomycosis.....	0	0	0	0	1
Yearly Totals.....	1844	2192	2147	2075	2136

*In 1907 there were two deaths from mumps.

**Sometimes denominated "ophthalmia neonatorum".

It might be well to add that it is questionable if erysipelas and septicemia, two distinctly surgical affections, should be included in the above enumeration. Impetigo contagiosa also falls in the same category. Purulent conjunctivitis, which I have regarded as synonymous with ophthalmia neonatorum, is rapidly coming to the forefront as a disease of public health importance and hence can be legitimately included. Pellagra has not been made a reportable disease in Maryland, although the Surgeon General advises that this should be done.

The death attributed to anthrax was probably carbuncle and not splenic fever.

The total number of deaths in the counties of Maryland, year 1912, was 11,073 as compared to 10,969 in 1911. This figure (11,073) includes some belated returns and 850 stillbirths. No deaths resulted from smallpox, chickenpox or German measles. There were 32 cases of infantile paralysis reported, with 16 deaths, compared with 12 cases reported and 22 deaths during the year 1911.

The total number of cases of sickness from communicable diseases reported in 1911, was 6,609; by including the 509 cases

of tuberculosis sent in by county physicians, the figures are raised to 7,118. In 1912, a total of 5,825 cases of sickness from communicable diseases was reported, which number is swollen to 6,347* when the county tuberculosis cases are included.

CASES OF SICKNESS FROM COMMUNICABLE DISEASE IN THE
COUNTIES OF MARYLAND FOR 1912, 1911, 1910,
1909 AND 1908.

<i>Name of Disease.</i>	<i>Year of</i> 1912	<i>Year of</i> 1911	<i>Year of</i> 1910	<i>Year of</i> 1909	<i>Year of</i> 1908
Typhoid Fever.....	1795	1980	2348	1977	1647
Measles.....	1675	1706	1323	2471	2047
Diphtheria.....	784	783	600	614	642
Scarlet Fever.....	608	653	682	588	572
Whooping Cough.....	441	453	734	355	355
Chickenpox.....	251	274	215	229	115
Mumps.....	103	605	243	91	101
Influenza.....	61	41	92	21	17
Anterior Poliomyelitis.....	32	12	33	0	0
Smallpox.....	20	31	6	16	33
Erysipelas.....	18	15	15	18	9
Malaria.....	14	27	7	5	8
German Measles.....	11	13	56	21	73
Meningitis.....	6	8	2	6	8
Septicemia.....	4	1	1	3	0
Acute Dysentery.....	1	3	0	0	0
Trachoma.....	1	0	0	0	0
Glandular Fever.....	0	0	0	0	6
Pellagra.....	0	3	0	0	0
Tetanus.....	0	1	0	0	0
Impetigo Contagiosa.....	0	0	0	58	1
Catarrhal Conjunctivitis..	0	0	0	2	47
Ringworm.....	0	0	0	0	180
Contagious Jaundice.....	0	0	0	0	15
Yearly Totals.....	5825	6009	6357	6475	5876

*In the attached infectious disease summary the total is 5,825. There were reported during the year 3,262 cases of tuberculosis, distributed as follows:

- (a) Reported by county physicians, 522.
- (b) Reported by city physicians, 645.
- (c) Institutional cases, 2,095.

By including the 522 cases of tuberculosis reported by county physicians, the figures are raised to 6,347.

The tuberculosis figures (morbidity) have been separately compiled, and hence do not appear in the above summary. To recapitulate: The total number of deaths in rural Maryland for the year 1912, was 11,073. Of this number there resulted from infectious diseases 1,844. Tuberculosis caused the largest number of deaths from any one infectious disease (1,045);

typhoid fever, with 229 deaths, stands second; and whooping cough, with 111 deaths, stands third.

A total of 6,347 cases of sickness from contagious and infectious diseases was reported in the counties of Maryland, Baltimore City not included, for the year 1912. Typhoid fever, measles, diphtheria, scarlet fever, whooping cough, chickenpox and mumps, were the prevailing epidemics.

A monthly summary of the deaths from infectious diseases, together with the number of cases of sickness reported, will subsequently be given. Anyone desiring specific information regarding the prevalence of any infectious disease in the counties of Maryland is especially referred to the section on the disease in question.

INTRODUCTORY FOR THE YEAR 1912.

JANUARY.—There were 100 deaths resulted from tuberculosis, as compared with 84 in the preceding month (December, 1911). Typhoid fever claimed only 19 victims in the month of January, 1912, as compared with 31 in December, 1911. One hundred and eighteen cases of sickness from this disease were reported, as compared with 175 in the month immediately preceding.

The number of deaths from influenza has decidedly increased. In fact, it has almost trebled, 20 in all, as against 7 in the preceding month. Whooping cough caused 13 deaths in the present month (January), as compared with 8 in last month (December, 1911).

Anterior poliomyelitis caused 2 deaths this month, as compared with 3 deaths in December, 1911. There were two deaths from pellagra in January, the first that has occurred since October, 1911.

In January, 1912, a total of 185 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in the order of their numerical importance, with comparative figures for the corresponding month of 1911, 1910, 1909 and 1908.

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR JANUARY, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

	<i>January</i>	<i>January</i>	<i>January</i>	<i>January</i>	<i>January</i>
<i>Name of Disease.</i>	1912	1911	1910	1909	1908
Tuberculosis.....	100	87	115	102	86
Influenza.....	20	31	36	21	90
Typhoid Fever.....	19	19	24	12	28
Whooping Cough.....	13	18	21	6	11
Diphtheria.....	12	17	6	13	9
Meningitis.....	7	11	6	2	0
Scarlet Fever.....	4	3	3	1	2
Septicemia.....	3	3	5	3	0
Erysipelas.....	3	8	2	1	0
Anterior Poliomyelitis.....	2	2	0	0	0
Pellagra.....	2	0	0	0	0
Measles.....	0	2	5	12	2
Chickenpox.....	0	1	1	0	1
Mumps.....	0	1	0	0	0
Malaria.....	0	1	0	0	0
Anthrax.....	0	0	1	0	0
Ophthalmia Neonatorum..	0	0	0	1	0
Monthly Totals.....	185	204	225	174	229

The typhoid fever morbidity figures show a gratifying decrease, compared with the preceding month (December, 1911); likewise diphtheria, whooping cough, chickenpox and anterior poliomyelitis. The scarlet fever cases have slightly increased in number, as also have those from measles and mumps.

In January, 1912, a total of 459 cases of sickness from communicable diseases was reported in the counties of Maryland. The following are these morbidity figures arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR JANUARY, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>January</i> 1912	<i>January</i> 1911	<i>January</i> 1910	<i>January</i> 1909	<i>January</i> 1908
Typhoid Fever.....	118	73	52	72	47
Scarlet Fever.....	111	91	62	96	57
Diphtheria.....	101	92	53	72	50
Chickenpox.....	41	29	52	47	10
Whooping Cough.....	38	33	73	22	9
Mumps.....	16	88	25	18	5
Measles.....	15	135	438	195	32
Influenza.....	12	6	76	0	1
Erysipelas.....	6	4	0	0	0
Meningitis.....	1	0	0	2	0
Smallpox.....	0	8	1	0	3
Anterior Poliomyelitis.....	0	2	0	0	0
Pellagra.....	0	2	0	0	0
German Measles.....	0	0	3	3	0
Impetigo Contagiosa.....	0	0	0	54	0
Monthly Totals.....	459	563	835	581	214

FEBRUARY.—In the month of February, 1912, 97 deaths resulted from tuberculosis, as compared with 100 in January. In February, 1912, a total of 153 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for the corresponding month of 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR FEBRUARY, 1912; WITH COMPARATIVE
FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>Feb'ry</i> 1912	<i>Feb'ry</i> 1911	<i>Feb'ry</i> 1910	<i>Feb'ry</i> 1909	<i>Feb'ry</i> 1908
Tuberculosis.....	97	119	112	99	112
Influenza.....	20	45	33	19	62
Typhoid Fever.....	9	13	13	9	20
Diphtheria.....	7	11	8	6	13
Whooping Cough.....	7	12	14	3	6
Meningitis.....	7	6	4	13	0
Scarlet Fever.....	3	4	0	4	8
Septicemia.....	2	3	3	3	0
Erysipelas.....	1	3	5	0	0
Measles.....	0	3	7	12	6
Chickenpox.....	0	1	0	0	0
Anterior Poliomyelitis.....	0	2	0	0	0
Pellagra.....	0	2	0	0	0
Malaria.....	0	0	1	3	0
Monthly Totals.....	153	224	200	171	227

The number of deaths from typhoid fever are decidedly decreasing each month. Deaths from diphtheria and whooping cough are also diminishing, but influenza and meningitis remain the same. There were no deaths during the month of February, 1912, from measles, chickenpox, malaria, mumps, pellagra, nor anterior poliomyelitis.

The morbidity figures also show that typhoid fever is greatly on the decrease. Scarlet fever, diphtheria and whooping cough are diminishing rapidly, while influenza and chickenpox remain about the same. Measles has taken quite a jump. There are 100 cases reported during the month of February, 1912, as compared with 15 cases in the month of January.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR FEBRUARY, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

	<i>Feb'ry</i>	<i>Feb'ry</i>	<i>Feb'ry</i>	<i>Feb'ry</i>	<i>Feb'ry</i>
<i>Name of Disease.</i>	1912	1911	1910	1909	1908
Measles.....	100	189	102	472	198
Diphtheria.....	73	65	48	46	42
Scarlet Fever.....	64	45	51	49	64
Typhoid Fever.....	57	56	50	21	36
Chickenpox.....	40	31	15	45	11
Mumps.....	29	85	8	12	14
Whooping Cough.....	19	36	74	8	103
Influenza.....	13	5	3	3	0
Septicemia.....	2	0	0	2	0
German Measles.....	0	1	1	5	15
Smallpox.....	0	4	0	0	0
Meningitis.....	0	1	0	0	0
Erysipelas.....	0	0	4	0	0
Impetigo Contagiosa.....	0	0	0	4	0
Monthly Totals.....	397	518	356	667	483

MARCH.—In the month of March, 1912, 89 deaths resulted from tuberculosis, as compared with 97 in February. In March, 1912, a total of 161 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR MARCH, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

	<i>March</i>	<i>March</i>	<i>March</i>	<i>March</i>	<i>March</i>
<i>Name of Disease.</i>	1912	1911	1910	1909	1908
Tuberculosis.....	89	115	99	111	99
Influenza.....	20	46	43	42	42
Diphtheria.....	15	11	10	11	8
Typhoid Fever.....	13	20	15	8	10
Whooping Cough.....	8	16	11	7	17
Septicemia.....	6	7	6	3	0
Meningitis.....	4	5	8	12	0
Measles.....	3	4	6	11	3
Erysipelas.....	2	2	4	1	0
Anterior Poliomyelitis.....	1	1	0	0	0
Scarlet Fever.....	0	1	2	1	2
Malaria.....	0	0	1	1	0
Pellagra.....	0	0	1	0	0
Chickenpox.....	0	0	0	1	0
Mumps.....	0	0	0	0	1
Monthly Totals.....	161	228	206	209	182

The number of deaths from typhoid fever increased a little over last month. Diphtheria decidedly increased, and we had one more death this month from whooping cough. There were no deaths from scarlet fever, but three from measles, compared to none in the month of February.

The morbidity figures show that typhoid fever remains about the same, but that diphtheria and scarlet fever have both decreased considerably. The number of cases of measles still continues to rise; also whooping cough and influenza. Chickenpox still ranges from 40 to 50 cases. The following are the morbidity figures arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908.

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR MARCH, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>March</i> 1912	<i>March</i> 1911	<i>March</i> 1910	<i>March</i> 1909	<i>March</i> 1908
Measles.....	168	429	168	463	715
Scarlet Fever.....	59	60	78	70	55
Typhoid Fever.....	54	44	77	25	42
Chickenpox.....	48	26	18	21	21
Diphtheria.....	41	64	27	40	53
Whooping Cough.....	39	37	41	100	92
Influenza.....	20	18	0	0	15
Mumps.....	14	132	7	24	23
Erysipelas.....	1	1	3	2	2
Malaria.....	0	3	0	0	0
Meningitis.....	0	1	0	0	0
German Measles.....	0	0	40	0	37
Smallpox.....	0	0	0	1	7
Glandular Fever.....	0	0	0	0	6
Impetigo Contagiosa.....	0	0	0	0	1
Monthly Totals.....	444	815	459	740	1069

APRIL.—In the month of April, 1912, 102 deaths resulted from tuberculosis, as compared with 89 in March. In April, 1912, a total of 153 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908.

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR APRIL, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>April</i> 1912	<i>April</i> 1911	<i>April</i> 1910	<i>April</i> 1909	<i>April</i> 1908
Tuberculosis.....	102	106	87	109	105
Typhoid Fever.....	13	11	19	10	15
Influenza.....	9	30	17	46	23
Measles.....	8	21	2	14	26
Diphtheria.....	6	8	4	8	14
Whooping Cough.....	5	10	19	5	10
Meningitis.....	3	6	10	7	0
Septicæmia.....	3	2	5	5	0
Anterior Poliomyelitis.....	2	1	0	0	0
Scarlet Fever.....	1	1	4	5	3
Mumps.....	1	1	0	0	0
Erysipelas.....	0	2	1	2	0
Chickenpox.....	0	0	0	1	0
Malaria.....	0	0	0	1	0
German Measles.....	0	0	0	0	1
Monthly Totals.....	153	199	168	213	197

The number of deaths from influenza have decidedly decreased, as there were only 9 in the month of April, as compared to 20 in the month of March. Diphtheria has also greatly diminished, but typhoid fever remains about the same. Measles has taken a rise, having 8 deaths this month, compared to 3 in the month of March. There was one death from scarlet fever this month, also 1 from mumps, which is very rare.

The morbidity figures show that typhoid fever remains just the same, but that both scarlet fever and diphtheria continue to decrease. Measles is the only disease that is on the increase. There are 332 cases in the month of April, as compared to 168 in the month of March.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908.

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR APRIL, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

	<i>April</i>	<i>April</i>	<i>April</i>	<i>April</i>	<i>April</i>
<i>Name of Disease.</i>	1912	1911	1910	1909	1908
Measles.....	332	275	97	332	467
Typhoid Fever.....	54	39	33	25	25
Diphtheria.....	39	38	19	43	31
Whooping Cough.....	34	24	23	2	38
Scarlet Fever.....	25	59	40	27	35
Mumps.....	14	130	30	16	35
Chickenpox.....	13	18	22	11	24
Erysipelas.....	3	2	0	2	1
Influenza.....	2	0	4	13	1
German Measles.....	2	1	10	2	17
Meningitis.....	1	1	0	0	2
Malaria.....	1	2	0	0	0
Smallpox.....	0	5	0	8	3
Catarrhal Conjunctivitis...	0	0	0	2	47
Monthly Totals.....	520	594	278	483	726

MAY.—In the month of May, 1912, 94 deaths resulted from tuberculosis, as compared with 102 in April.

In May, 1912, a total of 136 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908.

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR MAY, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>May</i> 1912	<i>May</i> 1911	<i>May</i> 1910	<i>May</i> 1909	<i>May</i> 1908
Tuberculosis.....	94	94	84	98	73
Influenza.....	7	15	7	18	13
Typhoid Fever.....	7	17	17	8	8
Whooping Cough.....	7	25	27	16	15
Measles.....	9	6	3	9	8
Diphtheria.....	3	4	5	4	6
Meningitis.....	3	2	5	5	5
Septicemia.....	3	6	4	6	0
Erysipelas.....	2	1	1	0	3
Malaria.....	1	2	3	2	1
Pellagra.....	1	0	0	0	0
Anterior Poliomyelitis.....	1	2	0	0	0
Acute Dysentery.....	1	0	0	0	0
Scarlet Fever.....	0	2	2	2	3
Chickenpox.....	0	1	0	1	0
Impetigo Contagiosa.....	0	1	0	0	0
Actinomycosis.....	0	0	0	0	1
Monthly Totals.....	136	178	158	169	136

There has been very little difference in the number of deaths from influenza in this month. There were 7 deaths in May, as compared to 9 in April. The deaths from typhoid fever have diminished to nearly one-half; 7 in May, as compared to 13 in April. Measles remain about the same, also whooping cough. There was one death from pellagra this month, the first that has occurred since January, when there were two.

The morbidity figures show that typhoid fever, measles, diphtheria and scarlet fever are all decidedly on the decrease, but that whooping cough has taken a sudden rise. There were 98 cases in the month of May, as compared to 34 in April.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR MAY, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>May</i> 1912	<i>May</i> 1911	<i>May</i> 1910	<i>May</i> 1909	<i>May</i> 1908
Measles.....	270	322	235	271	368
Whooping Cough.....	98	60	47	38	6
Typhoid Fever.....	35	44	55	31	20
Diphtheria.....	22	28	30	23	36
Scarlet Fever.....	15	40	106	14	32
Chickenpox.....	13	24	15	5	2
German Measles.....	9	3	1	0	2
Mumps.....	4	93	118	8	6
Erysipelas.....	2	2	1	1	0
Anterior Poliomyelitis.....	1	1	0	0	0
Malaria.....	1	1	1	0	0
Influenza.....	0	0	0	4	0
Meningitis.....	0	0	1	0	1
Smallpox.....	0	9	4	0	11
Tetanus.....	0	1	0	0	0
Ringworm.....	0	0	0	0	180
Monthly Totals.....	470	628	614	395	664

JUNE.—In the month of June, 1912, 79 deaths resulted from tuberculosis, as compared with 94 in May.

In June, a total of 119 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR JUNE, 1912; WITH COMPARATIVE
FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>June</i> 1912	<i>June</i> 1911	<i>June</i> 1910	<i>June</i> 1909	<i>June</i> 1908
Tuberculosis.....	79	87	80	104	100
Whooping Cough.....	9	6	23	12	12
Influenza.....	7	4	5	10	5
Meningitis.....	5	2	4	7	12
Diphtheria.....	4	2	5	3	7
Malaria.....	4	2	1	2	2
Typhoid Fever.....	3	11	13	11	15
Erysipelas.....	3	4	2	3	3
Septicemia.....	3	3	8	1	1
Acute Dysentery.....	1	0	0	0	0
Pellagra.....	1	1	1	0	0
Measles.....	0	5	2	7	2
Scarlet Fever.....	0	1	2	0	3
Mumps.....	0	1	0	0	0
Monthly Totals.....	119	129	146	160	162

There has been a slight change in the number of deaths from whooping cough in this month. There were 9 deaths in June, as compared to 7 in May. The deaths from typhoid fever are decreasing; there were 3 deaths in June, as compared to 7 in May. There is a slight increase in the number of deaths from meningitis. There were 5 deaths in June, as compared to 3 in May. There was one more death from pellagra in June, the second that has occurred since January, when there were two.

The morbidity figures show that measles, whooping cough, diphtheria and scarlet fever are decidedly on the decrease. Typhoid fever has increased.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR JUNE, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>June</i> 1912	<i>June</i> 1911	<i>June</i> 1910	<i>June</i> 1909	<i>June</i> 1908
Measles.....	156	188	108	196	50
Whooping Cough.....	80	63	281	22	2
Typhoid Fever.....	51	65	75	62	70
Diphtheria.....	16	24	33	20	30
Scarlet Fever.....	10	27	34	22	25
Mumps.....	8	23	9	8	9
Chickenpox.....	6	21	25	5	5
Malaria.....	2	5	0	0	1
Erysipelas.....	1	0	4	4	0
Smallpox.....	0	4	1	0	8
Influenza.....	0	0	0	1	0
Meningitis.....	0	0	0	1	1
Septicemia.....	0	0	0	1	0
Monthly Totals.....	330	420	570	342	201

JULY.—In the month of July, 1912, 72 deaths resulted from tuberculosis, as compared with 79 in June.

In July, a total of 126 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR JULY, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>July</i> 1912	<i>July</i> 1911	<i>July</i> 1910	<i>July</i> 1909	<i>July</i> 1908
Tuberculosis.....	72	100	91	113	91
Typhoid Fever.....	12	18	17	30	33
Whooping Cough.....	12	16	15	10	12
Meningitis.....	11	9	13	10	8
Acute Dysentery.....	8	0	0	0	0
Measles.....	3	2	4	2	5
Anterior Poliomyelitis.....	3	3	4	0	0
Influenza.....	2	4	6	4	3
Diphtheria.....	1	3	3	3	3
Malaria.....	1	0	2	1	0
Septicemia.....	1	6	2	5	7
Scarlet Fever.....	0	3	0	0	0
Pellagra.....	0	1	0	0	0
Chickenpox.....	0	0	1	0	0
Erysipelas.....	0	0	0	1	0
Monthly Totals.....	126	165	158	179	162

There has been a slight increase in the number of deaths from whooping cough this month. There is also an increase of 9 deaths from typhoid fever; there were 3 in June, as compared to 12 in July. There is a slight increase in the number of deaths from meningitis. There were 5 deaths in June, as compared to 11 in July.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE COUNTIES OF MARYLAND FOR JULY, 1912; WITH COMPARATIVE FIGURES FOR THE CORRESPONDING MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>July</i> 1912	<i>July</i> 1911	<i>July</i> 1910	<i>July</i> 1909	<i>July</i> 1908
Typhoid Fever.....	150	163	133	358	215
Measles.....	91	76	17	128	48
Scarlet Fever.....	42	22	24	23	5
Whooping Cough.....	34	41	23	31	18
Diphtheria.....	31	31	17	22	21
Anterior Poliomyelitis....	7	0	1	0	0
Chickenpox.....	3	7	10	2	5
Mumps.....	1	18	1	2	1
Erysipelas.....	1	1	0	2	1
Influenza.....	1	0	0	0	0
Smallpox.....	0	1	0	0	0
Meningitis.....	0	2	1	2	1
Pellagra.....	0	1	0	0	0
German Measles.....	0	0	0	1	0
Malaria.....	0	0	0	0	1
Monthly Totals.....	361	363	227	571	316

AUGUST.—In the month of August, 1912, 77 deaths resulted from tuberculosis as compared with 72 in July.

In August, a total of 165 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF MARYLAND FOR AUGUST, 1912; WITH COMPARATIVE FIGURES FOR THE CORRESPONDING MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>August</i> 1912	<i>August</i> 1911	<i>August</i> 1910	<i>August</i> 1909	<i>August</i> 1908
Tuberculosis.....	77	85	61	80	86
Whooping Cough.....	24	16	20	18	8
Typhoid Fever.....	23	47	35	48	55
Meningitis.....	13	7	4	12	13
Acute Dysentery.....	10	0	0	0	0
Diphtheria.....	8	7	7	2	6
Septicemia.....	4	7	3	1	0
Anterior Poliomyelitis....	3	0	10	0	0
Erysipelas.....	2	3	2	1	1
Influenza.....	1	2	0	2	2
Measles.....	0	1	1	2	2
Scarlet Fever.....	0	1	0	0	0
Malaria.....	0	0	1	1	2
Monthly Totals.....	165	176	144	167	175

There has been an increase in the number of deaths from tuberculosis, whooping cough and typhoid fever. In July there were 12 deaths from whooping cough; and in July there were 12 deaths from typhoid fever, as compared to 23 in August.

It was impossible to give the total number of deaths when the Health Officers' Bulletin was written, because there were several health officers who had not sent in their death certificates. However, the belated returns are in this month's Bulletin.

ADDENDA ET CORRIGENDA—1912 REPORT.

(1) 79 deaths from meningitis, instead of 71, in 1910, 8 being added on in the month of September, 1910, making the total for the year: Meningitis, 79 deaths; infectious diseases, 2,147.

(2) In August, 1910, 33 cases of scarlet fever instead of 29, 4 having been added on. Scarlet fever cases for the year: 682 instead of 678. Grand total, all cases 1910: 6,357, instead of 6,353.

(3) In August, 1911, 3 cases of acute dysentery, raising the total morbidity for the year to 6,609 plus 509=7,118, instead of 6,606 and 7,115, respectively.

(4) Instead of 3 cases of anterior poliomyelitis, August, 1910, should be 9 cases.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE COUNTIES OF MARYLAND FOR AUGUST, 1912; WITH COMPARATIVE FIGURES FOR THE CORRESPONDING MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>August</i> 1912	<i>August</i> 1911	<i>August</i> 1910	<i>August</i> 1909	<i>August</i> 1908
Typhoid Fever.....	359	347	521	401	402
Measles.....	50	32	1	28	6
Diphtheria.....	49	26	24	36	22
Whooping Cough.....	18	39	56	24	15
Scarlet Fever.....	15	13	33	23	30
Anterior Poliomyelitis.....	10	0	9	0	0
Mumps.....	5	10	1	0	1
Influenza.....	4	0	0	0	0
Chickenpox.....	3	2	0	27	0
Meningitis.....	1	0	0	0	1
Septicemia.....	1	0	0	0	0
Malaria.....	1	6	0	0	0
Acute Dysentery.....	1	3	0	0	0
Erysipelas.....	0	2	1	1	0
German Measles.....	0	0	0	3	0
Monthly Totals.....	517	480	646	543	477

SEPTEMBER.—In the month of September, 1912, 83 deaths resulted from tuberculosis, as compared to 77 in August.

A correction should be made concerning the Cumberland cases of typhoid fever in August Bulletin. Cumberland is credited with 42 cases of sickness. Nine of these cases occurred beyond the corporate limits of Cumberland, and nine were imported cases brought to Cumberland for hospital treatment. Deducting these 18 cases from the total of 42 cases, as stated last month, leaves to the credit of the City of Cumberland but 24 cases of this disease.

In September, a total of 165 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR SEPTEMBER, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

	<i>Sept'b'r</i>	<i>Sept'b'r</i>	<i>Sept'b'r</i>	<i>Sept'b'r</i>	<i>Sept'b'r</i>
<i>Name of Disease.</i>	1912	1911	1910	1909	1908
Tuberculosis.....	83	89	88	54	78
Typhoid Fever.....	33	59	47	52	60
Meningitis.....	15	7	8	8	15
Whooping Cough.....	10	14	21	13	8
Diphtheria.....	8	4	11	9	6
Septicemia.....	5	4	3	0	10
Malaria.....	4	1	4	3	1
Acute Dysentery.....	4	0	0	0	0
Anterior Poliomyelitis....	2	1	3	0	0
Scarlet Fever.....	1	0	2	2	2
Influenza.....	0	2	0	4	4
Pellagra.....	0	1	1	0	0
Measles.....	0	0	1	1	0
Erysipelas.....	0	0	0	1	0
Monthly Totals.....	165	182	189	147	184

There has been an increase in the number of deaths from tuberculosis, typhoid fever, meningitis and malaria. In August there were 23 deaths from typhoid fever, and in September there were 33 deaths from this disease. Infectious disease returns have been received from all but one jurisdiction, namely, that of Wicomico county.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR SEPTEMBER, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

	<i>Sept'b'r</i>	<i>Sept'b'r</i>	<i>Sept'b'r</i>	<i>Sept'b'r</i>	<i>Sept'b'r</i>
<i>Name of Disease.</i>	1912	1911	1910	1909	1908
Typhoid Fever.....	299	436	498	432	363
Diphtheria.....	59	54	63	45	93
Scarlet Fever.....	35	40	58	42	54
Whooping Cough.....	30	29	27	35	15
Anterior Poliomyelitis....	6	0	11	0	0
Malaria.....	5	5	3	4	0
Mumps.....	3	2	14	2	0
Measles.....	2	9	7	37	17
Chickenpox.....	2	4	2	3	2
Erysipelas.....	2	1	0	0	0
Meningitis.....	1	0	0	0	0
Septicemia.....	1	0	0	0	0
German Measles.....	0	0	0	3	0
Monthly Totals.....	445	580	683	603	544

OCTOBER.—In the month of October, 1912, 78 deaths resulted from tuberculosis, as compared to 83 in September.

In October, a total of 145 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

**COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR OCTOBER, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.**

<i>Name of Disease.</i>	<i>October 1912</i>	<i>October. 1911</i>	<i>October 1910</i>	<i>October 1909</i>	<i>October 1908</i>
Tuberculosis.....	78	78	67	64	71
Typhoid Fever.....	35	51	35	49	40
Diphtheria.....	9	11	9	9	14
Septicemia.....	6	4	0	5	5
Meningitis.....	4	3	8	5	8
Malaria.....	4	1	1	2	3
Acute Dysentery.....	3	0	0	0	0
Influenza.....	3	1	3	0	2
Whooping Cough.....	1	14	19	9	0
Anterior Poliomyelitis.....	1	4	6	0	0
Purulent Conjunctivitis....	1	0	0	0	0
Scarlet Fever.....	0	1	3	1	1
Mumps.....	0	1	1	0	0
Pellagra.....	0	1	0	0	0
Erysipelas.....	0	0	3	2	0
Measles.....	0	0	0	3	3
Chickenpox.....	0	0	0	0	1
Monthly Totals.....	145	170	155	149	148

There has been a decrease in the number of deaths from tuberculosis, whooping cough and meningitis. In September there were 33 deaths from typhoid fever, while in October there were 35 deaths from this disease. Infectious disease returns have been received from all the counties of Maryland during the month of October.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

**CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR OCTOBER, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.**

<i>Name of Disease.</i>	<i>October 1912</i>	<i>October 1911</i>	<i>October 1910</i>	<i>October 1909</i>	<i>October 1908</i>
Typhoid Fever.....	337	332	420	291	217
Diphtheria.....	109	127	110	106	117
Scarlet Fever.....	94	65	63	56	43
Whooping Cough.....	13	17	26	21	24
Chickenpox.....	10	14	19	7	11
Measles.....	9	26	22	120	29
Mumps.....	7	4	4	1	6
Malaria.....	3	2	2	1	6
Anterior Poliomyelitis....	3	3	7	0	0
Erysipelas.....	1	0	0	2	1
Influenza.....	1	0	7	0	0
German Measles.....	0	5	0	3	1
Smallpox.....	0	0	0	3	1
Monthly Totals.....	587	595	680	611	456

NOVEMBER.—In the month of November, 1912, 85 deaths resulted from tuberculosis, as compared to 78 in October.

In November, a total of 167 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative figures for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR NOVEMBER, 1912; WITH COMPARA-
TIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>Novem.</i> 1912	<i>Novem.</i> 1911	<i>Novem.</i> 1910	<i>Novem.</i> 1909	<i>Novem.</i> 1908
Tuberculosis.....	85	80	91	96	64
Typhoid Fever.....	32	52	36	40	39
Diphtheria.....	19	7	15	12	16
Meningitis.....	8	2	1	7	8
Whooping Cough.....	6	13	14	6	1
Septicemia.....	6	9	10	6	5
Influenza.....	4	7	6	6	3
Scarlet Fever.....	2	2	3	1	2
Malaria.....	2	2	1	2	2
Erysipelas.....	1	0	2	3	4
Acute Dysentery.....	2	0	0	0	0
Anterior Poliomyelitis....	0	3	3	0	0
Measles.....	0	0	4	0	0
Pellagra.....	0	0	0	1	0
Monthly Totals.....	167	177	186	180	144

There has been an increase of seven deaths from tuberculosis, and ten from diphtheria. In October there were 35 deaths from typhoid fever, while in November there were three less, making a total of 32 deaths. During the month of November there were no returns from Wicomico or Worcester county.

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR NOVEMBER, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>Novem.</i> 1912	<i>Novem.</i> 1911	<i>Novem.</i> 1910	<i>Novem.</i> 1909	<i>Novem.</i> 1908
Typhoid Fever.....	172	206	246	178	132
Diphtheria.....	138	117	76	101	77
Measles.....	108	16	70	134	45
Scarlet Fever.....	71	94	54	101	76
Chickenpox.....	30	40	11	17	10
Whooping Cough.....	17	7	39	13	9
Smallpox.....	11	0	0	0	0
Mumps.....	2	7	11	0	1
Anterior Poliomyelitis....	1	3	5	0	0
Erysipelas.....	1	0	2	4	3
Malaria.....	0	1	1	0	0
Septicemia.....	0	1	1	0	0
German Measles.....	0	0	1	1	1
Meningitis.....	0	0	0	1	0
Monthly Totals.....	551	492	517	550	354

DECEMBER.—In the month of December, 1912, 89 deaths resulted from tuberculosis, as compared with 85 in November. There were 16 deaths from diphtheria, a decrease of 3, and 10 from influenza, an increase of 6, as compared with the month immediately preceding. The mortality from typhoid fever remains stationary.

In December, a total of 169 deaths from infectious diseases occurred in the counties of Maryland. The following is a condensed summary of these deaths, arranged in point of numbers, with comparative statistics for 1911, 1910, 1909 and 1908:

COMMUNICABLE DISEASE DEATHS IN THE COUNTIES OF
MARYLAND FOR DECEMBER, 1912; WITH COMPARATIVE
FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>Decem.</i> 1912	<i>Decem.</i> 1911	<i>Decem.</i> 1910	<i>Decem.</i> 1909	<i>Decem.</i> 1908
Tuberculosis.....	89	84	101	88	104
Typhoid Fever.....	30	31	38	17	27
Diphtheria.....	16	10	22	9	18
Influenza.....	10	7	10	7	11
Meningitis.....	10	3	8	6	8
Whooping Cough.....	9	8	16	13	3
Erysipelas.....	2	0	2	2	1
Anterior Poliomyelitis....	1	3	4	0	0
Pellagra.....	1	0	1	0	0
Acute Dysentery.....	1	0	0	0	0
Malaria.....	0	1	1	1	0
Septicemia.....	0	9	6	4	10
Scarlet Fever.....	0	3	1	4	2
Measles.....	0	1	2	6	6
Monthly Totals.....	169	160	212	157	190

The following are the morbidity figures, arranged in numerical order, with comparative statistics for the corresponding month of 1911, 1910, 1909 and 1908:

CASES OF SICKNESS FROM COMMUNICABLE DISEASES IN THE
COUNTIES OF MARYLAND FOR DECEMBER, 1912; WITH
COMPARATIVE FIGURES FOR THE CORRESPONDING
MONTH OF 1911, 1910, 1909 AND 1908.

<i>Name of Disease.</i>	<i>Decem.</i> 1912	<i>Decem.</i> 1911	<i>Decem.</i> 1910	<i>Decem.</i> 1909	<i>Decem.</i> 1908
Measles.....	374	9	58	95	72
Typhoid Fever.....	109	175	188	81	78
Diphtheria.....	106	117	100	60	70
Scarlet Fever.....	67	97	79	65	96
Chickenpox.....	42	58	26	39	14
Whooping Cough.....	21	67	24	39	24
Smallpox.....	9	0	0	4	0
Influenza.....	8	12	2	0	0
Anterior Poliomyelitis.....	4	3	0	0	0
Meningitis.....	2	3	0	0	2
Malaria.....	1	2	0	0	0
Trachoma.....	1	0	0	0	0
Mumps.....	0	13	15	0	0
German Measles.....	0	3	0	0	0
Erysipelas.....	0	2	0	0	1
Contagious Jaundice.....	0	0	0	0	15
Monthly Totals.....	744	561	492	383	372

During the entire month only three cases of infectious diseases were reported from Worcester county, and no cases whatever from Wicomico county. In both of these counties there is a large proportion of colored people, among whom infectious diseases especially prevail.

For the first time in the history of the Bulletin a case of trachoma is recorded, occurring in a white male aged 29 years, residing in Crisfield, Somerset county. It is a contagious disease of the eyelids, especially transmissible through the agency of infected towels, whole families contracting it in this manner.

EPIDEMICS—1912.

JANUARY.—While typhoid fever is gradually decreasing, it is mildly epidemic at Catonsville, Mt. Winans and Morrell Park, Baltimore County.

Scarlet fever prevails throughout the State. A number of cases in Baltimore county, and a school outbreak at the Baltimore Manual Labor School at Relay, Baltimore county. An

outbreak of scarlet fever near Colora, Cecil county, and at Forest Hill, Harford county.

Diphtheria still prevails in Maryland, although the number of cases have decreased a little during the month of January. Diphtheria is mildly epidemic at Govanstown, Baltimore county.

There are a very few cases of measles in Maryland. Nearly all of them are in Hagerstown, Washington county.

Whooping cough is very mildly prevalent throughout Maryland. There is a house epidemic (7 cases) at Indian Head, Charles county.

FEBRUARY.—As our infectious diseases have so decreased during the month of February, 1912, we have only one bad epidemic, that of measles in Hagerstown, Washington county. There is a mild epidemic of typhoid fever in Highlandtown, Baltimore county; and a mild epidemic of scarlet fever at Roland Park, Baltimore county. There was a house outbreak of whooping cough at Bowens, Calvert county.

MARCH.—There have been several epidemics in the counties of Maryland, in the month of March, 1912. There is an epidemic of typhoid fever at Elkton, Cecil county. Measles still remains epidemic in Hagerstown, Washington county, in fact, prevalent throughout Washington county.

Epidemic of scarlet fever at Pocomoke City, Worcester county; an epidemic, in mild form, of chickenpox at Lonaconing, Allegany county. There are about 20 cases of influenza, at Kensington, Montgomery county.

There have been several house outbreaks during March. House outbreak (4 cases) of diphtheria, at Middleburg, Carroll county; house epidemic of whooping cough (6 cases) at Kensington, Montgomery county; and another house outbreak of mumps (5 cases) at White Hall, Baltimore county.

APRIL.—Measles is the most widespread epidemic. There is an outbreak of measles in Cumberland, Allegany county; and several house epidemics in Smithsburg and Foxville, Frederick county. Measles also prevails to a great extent in Hagerstown and vicinity, Washington county.

There is an epidemic of whooping cough in Mt. Rainier, Prince George's county.

A mild outbreak of typhoid fever in Highlandtown, Baltimore county.

In Aberdeen, Harford county, there is a house outbreak (8 cases) of scarlet fever. In Funkstown, Washington county, there is an outbreak (4 cases) of diphtheria.

MAY.—Measles still remains the most widespread epidemic. It still prevails to great extent, in fact in epidemic form, in Cumberland, Allegany county. A number of cases continue throughout Washington county.

Whooping cough is also more or less epidemic. Mt. Rainier, Prince George's county, still has a mild epidemic of whooping cough. It has been going on for several months. There were a few cases in Takoma Park, Montgomery county, with a house outbreak of 4 cases. There were also several house outbreaks in Carroll county. One house outbreak of 9 cases in Detour, and another house outbreak of 5 cases in the same town. Union Bridge had two house outbreaks; one of 5 cases and one of 3 cases. There was also a house outbreak of 3 cases in Middleburg, Carroll county.

Seven out of the nine cases of German measles occurred in Takoma Park, Montgomery county.

JUNE.—Measles still continues to take the lead. They are more numerous in Cumberland, Allegany county. House outbreak of four cases in the Haynes home at Catonsville, Baltimore county. Several other outbreaks at Smithsburg, Washington county.

Whooping cough is on the decrease; there being 80 cases in June compared with 98 in May. There were two house outbreaks of 4 cases each. One at Bent Gate, Anne Arundel; and the other at Annapolis. There was also a house outbreak of 3 cases at Middleburg, Carroll county; and one of 4 cases at Union Bridge, in the same county. The epidemics are principally house outbreaks this month.

JULY.—Typhoid fever now has the lead. It is prevalent in Cumberland, Allegany county, Cambridge, Dorchester county, Crisfield, Somerset county and Delmar, Wicomico county.

There is an increase of 32 cases of scarlet fever. There were 3 house outbreaks: One at Patapsco, Carroll county, Aberdeen, Harford county, and also one at Henryton, Howard county.

AUGUST.—Typhoid fever is still at the head of the list. It is prevalent in Cumberland, Allegany county, Towson and Raspeburg, Baltimore county; Cambridge, Dorchester county; Crisfield, Somerset county; and Trappe, Talbot county.

There is an increase of 18 cases of diphtheria. There were two house outbreaks: One at Cumberland, Allegany county; and one at LeGore, Frederick county.

SEPTEMBER.—Typhoid fever is still at the head of the list. It is prevalent in Towson, Baltimore county, Mt. Washington also in Baltimore county, and Frederick, Frederick county.

There were seven cases at St. Mary's Industrial Home for Colored Girls, Melvale, Baltimore county.

There is an increase of 10 cases of diphtheria. One house outbreak at LeGore, Frederick county; and the other at Rosecroft, Prince George's county.

OCTOBER.—Typhoid fever is still at the head of the list. A small epidemic at Franklin, Allegany county; Towson, Baltimore county, Cambridge, Dorchester county; Crisfield, Somerset county; and Trappe, Talbot county.

There is an increase of 50 cases of diphtheria. One house outbreak at Gambrells, Anne Arundel county, and one at Worton, Kent county.

NOVEMBER.—There was a small epidemic of diphtheria at Fullerton, Baltimore county. There were also a number of cases in Hagerstown, Washington county.

There was a large epidemic of measles in Frostburg, Allegany county. There was a house outbreak in the family of Tritapoe, in Weverton, Washington county.

There was also an outbreak of smallpox in Cumberland, Allegany county.

DECEMBER.—Measles is still prevalent in Frostburg, Allegany county, to the extent of 267 cases. There were also 31 cases at Eckhart Mines, 22 at Eckhart, and 18 at Lonaconing, all in Allegany county.

There were 3 cases of smallpox at Westernport, 3 in Cumberland, and 1 at Lonaconing. The remaining two of the 9 cases were in Garrett county, one at Franklinville and the other at Deer Park. All were in unvaccinated white persons.

MORBIDITY STATEMENT—1912.

JANUARY.—Summary of the cases of contagious and infectious diseases reported in January, 1912: typhoid fever, 118 cases; scarlet fever, 111 cases; diphtheria, 101 cases; whooping cough, 38 cases; measles, 15 cases; chickenpox, 41 cases; mumps, 16 cases; meningitis, 1 case; erysipelas, 6 cases; and influenza, 12 cases. Total, 459 cases.

FEBRUARY.—Summary of the cases of contagious and infectious diseases reported in February, 1912: typhoid fever, 57 cases; scarlet fever, 64 cases; diphtheria, 73 cases; whooping cough, 19 cases; measles, 100 cases; chickenpox, 40 cases; mumps, 29 cases; septicemia, 2 cases; and influenza, 13 cases. Total, 397 cases.

MARCH.—Summary of the cases of contagious and infectious diseases reported in March, 1912: typhoid fever, 54 cases; scarlet fever, 59 cases; diphtheria, 41 cases; whooping cough, 39 cases; measles, 168 cases; chickenpox, 48 cases; mumps, 14 cases; influenza, 20 cases, and erysipelas, 1 case. Total, 444 cases.

APRIL.—Summary of the cases of contagious and infectious diseases reported in April, 1912: typhoid fever, 54 cases; scarlet fever, 25 cases; diphtheria, 39 cases; whooping cough, 34 cases; measles, 332 cases; chickenpox, 13 cases; mumps, 14 cases; influenza, 2 cases; German measles, 2 cases; erysipelas, 3 cases; and meningitis, 1 case; malaria, 1 case. Total, 520 cases.

MAY.—Summary of the cases of contagious and infectious diseases reported in May, 1912: typhoid fever, 35 cases; scarlet fever, 15 cases; diphtheria, 22 cases; whooping cough, 98 cases; measles, 270 cases; chickenpox, 13 cases; mumps, 4 cases; German measles, 9 cases; erysipelas, 2 cases; malaria, 1 case; and infantile paralysis, 1 case. Total, 470 cases.

JUNE.—Summary of the cases of contagious and infectious diseases reported in June, 1912: typhoid fever, 51 cases; scarlet fever, 10 cases; diphtheria, 16 cases; whooping cough, 80 cases; measles, 156 cases; chickenpox, 6 cases; mumps, 8 cases; erysipelas, 1 case; and malaria, 2 cases. Total, 330 cases.

JULY.—Summary of the cases of contagious and infectious diseases reported in July, 1912: typhoid fever, 150 cases; scarlet fever, 42 cases; diphtheria, 31 cases; whooping cough, 34 cases; measles, 91 cases; chickenpox, 3 cases; mumps, 1 case; erysipelas, 1 case; poliomyelitis, 7 cases, and influenza, 1 case. Total, 361 cases.

AUGUST.—Summary of the cases of contagious and infectious diseases reported in August, 1912: typhoid fever, 359 cases; scarlet fever, 15 cases; diphtheria, 49 cases; whooping cough, 18 cases; measles, 50 cases; chickenpox, 3 cases; mumps, 5 cases; malaria, 1 case; acute dysentery, 1 case; poliomyelitis, 10 cases; influenza, 4 cases; meningitis, 1 case; septicemia, 1 case. Total, 517 cases.

SEPTEMBER.—Summary of the cases of contagious and infectious diseases, reported in September, 1912: typhoid fever, 299 cases; scarlet fever, 35 cases; diphtheria, 59 cases; whooping cough, 30 cases; measles, 2 cases; chickenpox, 2 cases; mumps, 3 cases; malaria, 5 cases; erysipelas, 2 cases; meningitis, 1 case; infantile paralysis, 6 cases, and septicemia, 1 case. Total, 445 cases.

OCTOBER.—Summary of the cases of contagious and infectious diseases reported in October, 1912: typhoid fever, 337 cases; scarlet fever, 94 cases; diphtheria, 109 cases; whooping cough, 13 cases; measles, 9 cases; chickenpox, 10 cases; mumps, 7 cases; malaria, 3 cases; infantile paralysis, 3 cases, erysipelas, 1 case; and influenza, 1 case. Total, 587 cases.

NOVEMBER.—Summary of the cases of contagious and infectious diseases reported in November, 1912: typhoid fever, 172 cases; scarlet fever, 71 cases; diphtheria, 138 cases; whooping cough, 17 cases; measles, 108 cases; chickenpox, 30 cases; mumps, 2 cases; anterior poliomyelitis, 1 case; erysipelas, 1 case; and smallpox, 11 cases. Total, 551 cases.

DECEMBER.—Summary of the cases of contagious and infectious diseases reported in December, 1912: typhoid fever, 109 cases; scarlet fever, 67 cases; diphtheria, 106 cases; whooping cough, 21 cases; measles, 374 cases; chickenpox, 42 cases; malaria, 1 case; anterior poliomyelitis, 4 cases; smallpox, 9 cases; influenza, 8 cases; meningitis, 2 cases; and trachoma, 1 case. Total, 744 cases.

STATEMENT OF MORTALITY—1912.

JANUARY.—Total number of deaths from infectious and communicable diseases January, 1912: 185; general and non-communicable diseases and accidents, 840. Grand total, 1025.

Of the 185 deaths caused by infectious and communicable diseases, 100 resulted from tuberculosis, 19 from typhoid fever, 4 from scarlet fever, 13 from whooping cough, 12 from diphtheria, 20 from influenza, 7 from meningitis, 3 from septicemia, 3 from erysipelas, 2 from pellagra and 2 from anterior poliomyelitis. One hundred and thirty-three were white and 52 colored; 91 were males and 94 females.

FEBRUARY.—Total number of deaths from infectious and communicable diseases February, 1912: 153; general and non-communicable diseases and accidents, 806. Grand total, 959.

Of the 153 deaths caused by infectious and communicable diseases, 97 resulted from tuberculosis, 9 from typhoid fever, 3 from scarlet fever, 7 from whooping cough, 7 from diphtheria, 20 from influenza, 7 from meningitis, 2 from septicemia and 1 from erysipelas. One hundred and eight were white and 45 colored; 78 were males and 75 females.

MARCH.—Total number of deaths from infectious and communicable diseases March, 1912: 161; general and non-communicable diseases and accidents, 812. Grand total, 973.

Of the 161 deaths caused by infectious and communicable diseases, 89 resulted from tuberculosis, 13 from typhoid fever, 8 from whooping cough, 15 from diphtheria, 20 from influenza, 4 from meningitis, 6 from septicemia, 3 from measles, 1 from anterior poliomyelitis and 2 from erysipelas. Ninety-six were white and 65 colored; 83 were males and 78 females.

APRIL.—Total number of deaths from infectious and communicable diseases April, 1912: 153; general and non-communicable diseases and accidents, 677. Grand total, 830.

Of the 153 deaths caused by infectious and communicable diseases, 102 resulted from tuberculosis, 13 from typhoid fever, 5 from whooping cough, 6 from diphtheria, 9 from influenza, 3 from meningitis, 3 from septicemia, 8 from measles, 2 from anterior poliomyelitis, 1 from scarlet fever and 1 from mumps. One hundred and seven were white and 46 colored; 71 were males and 82 were females.

MAY.—The total number of deaths, all causes, in the counties of Maryland, May, 1912: 785, as follows: Infectious and communicable diseases, 136; general and noncommunicable diseases and accidents, 649.

Of the 136 deaths caused by infectious and communicable diseases, 94 resulted from tuberculosis, 7 from typhoid fever, 7 from whooping cough, 3 from diphtheria, 7 from influenza, 3 from meningitis, 3 from septicemia, 6 from measles, 1 from anterior poliomyelitis, 2 from erysipelas, 1 from malaria, 1 from pellagra and 1 from acute dysentery. Eighty-eight were white and 48 colored; 65 were females and 71 were males.

JUNE.—The total number of deaths in the counties of Maryland, all causes, June, 1912: 762, as follows: Infectious and communicable diseases, 119; general and noncommunicable diseases and accidents, 643.

Of the 119 deaths caused by infectious and communicable diseases, 79 resulted from tuberculosis, 3 from typhoid fever, 9 from whooping cough, 4 from diphtheria, 7 from influenza, 5 from meningitis, 3 from septicemia, 3 from erysipelas, 4 from malaria, 1 from dysentery and 1 from pellagra. Sixty-seven were white and 52 colored; 48 males and 71 were females.

JULY.—The total number of deaths in the counties of Maryland, all causes, July, 1912: 930, as follows: Infectious and communicable diseases, 126; general and noncommunicable diseases and accidents, 804.

Of the 126 deaths caused by infectious and communicable diseases, 72 resulted from tuberculosis, 12 from typhoid fever,

12 from whooping cough, 11 from meningitis, 1 from septicemia, 3 from measles, 3 from poliomyelitis, 1 from diphtheria, 2 from influenza, 1 from malaria and 8 from acute dysentery. Eighty were white and 46 colored; 69 were males and 57 females.

AUGUST.—The total number of deaths in the counties of Maryland, all causes, August, 1912: 1053, as follows: Infectious and communicable diseases, 165; general and noncommunicable diseases and accidents, 888.

Of the 165 deaths caused by infectious and communicable diseases, 77 resulted from tuberculosis, 23 from typhoid fever, 24 from whooping cough, 8 from diphtheria, 1 from influenza, 2 from erysipelas, 13 from meningitis, 4 from septicemia, 3 from anterior poliomyelitis and 10 from acute dysentery. One hundred and eighteen were white, 47 colored; 86 males and 79 females.

SEPTEMBER.—The total number of deaths in the counties of Maryland, all causes, September, 1912: 1012, as follows: Infectious and communicable diseases, 165; general and noncommunicable diseases and accidents, 847.

Of the 165 deaths caused by infectious and communicable diseases, 83 resulted from tuberculosis, 33 from typhoid fever, 1 from scarlet fever, 10 from whooping cough, 8 from diphtheria, 4 from malaria, 15 from meningitis, 5 from septicemia, 2 from anterior poliomyelitis and 4 from acute dysentery. One hundred and ten were white, 55 colored; 93 males and 72 females.

OCTOBER.—The total number of deaths in the counties of Maryland, all causes, October, 1912: 947, as follows: Infectious and communicable diseases, 145; general and noncommunicable diseases and accidents, 802.

Of the 145 deaths caused by infectious and communicable diseases, 78 resulted from tuberculosis, 35 from typhoid fever, 1 from whooping cough, 9 from diphtheria, 3 from influenza, 4 from malaria, 4 from meningitis, 6 from septicemia, 1 from anterior poliomyelitis, 3 from acute dysentery and 1 from purulent conjunctivitis. Ninety-five were white, 50 colored; 68 were males and 77 females.

NOVEMBER.—The total number of deaths in the counties of Maryland, all causes, November, 1912: 897, as follows: Infectious and communicable diseases, 167; general and noncommunicable diseases and accidents, 730.

Of the 167 deaths caused by infectious and communicable diseases, 85 resulted from tuberculosis, 32 from typhoid fever,

2 from scarlet fever, 6 from whooping cough, 19 from diphtheria, 4 from influenza, 2 from malaria, 1 from erysipelas, 8 from meningitis, 6 from septicemia and 2 from acute dysentery. One hundred and nineteen were white and 48 colored; 84 were males and 83 females.

DECEMBER.—The total number of deaths in the counties of Maryland, all causes, December, 1912: 900, as follows: Infectious and communicable diseases, 169; general and noncommunicable diseases and accidents, 731.

Of the 169 deaths caused by infectious and communicable diseases, 89 resulted from tuberculosis, 30 from typhoid fever, 9 from whooping cough, 16 from diphtheria, 10 from influenza, 2 from erysipelas, 10 from meningitis, 1 from anterior poliomyelitis, 1 from pellagra and 1 from acute dysentery. One hundred and ten were white, 59 colored; 91 were males and 78 females.

DEATHS BY INFECTIOUS DISEASES.

TUBERCULOSIS.

JANUARY.—Number of deaths reported, 100, as compared with 84 in December. Of these deaths, 66 occurred in white persons; 34 occurred in colored persons. With regard to sex, 49 were males and 51 females. Six deaths occurred in institutions. The youngest decedent was a white female child aged 5 months; the oldest was a colored female aged 85 years. The briefest period of illness was four weeks; the longest, 15 years. The percentage of deaths from tuberculosis per 10,000 of the white population and the colored population in the counties of Maryland is subjoined herewith:

1.12 per 10,000 of the white population.

2.31 per 10,000 of the colored population.

FEBRUARY.—Number of deaths reported, 97, as compared with 100 in January. Of these deaths, 66 occurred in white persons; 31 occurred in colored persons. With regard to sex, 49 were males and 48 females. Five deaths occurred in institutions. The youngest decedent was a white male child, aged 4 months; the oldest was a white male aged 85 years. The briefest period of illness was two weeks; the longest, 20 years. The percentage of deaths from tuberculosis per 10,000 of the white population and of the colored population in the counties of Maryland is subjoined herewith:

1.12 per 10,000 of the white population.

2.10 per 10,000 of the colored population.

MARCH.—Number of deaths reported, 89, as compared with 97 in February. Of these deaths, 42 occurred in white persons; 47 occurred in colored persons. With regard to sex, 46 were males, and 43 females. Six deaths occurred in institutions. The youngest decedent was a colored male child aged 2 years; the oldest was a white female, aged 78 years. The briefest period of illness was eight weeks; the longest, 20 years. The percentage of deaths from tuberculosis per 10,000 of the white population and of the colored population in the counties of Maryland is subjoined herewith:

0.71 per 10,000 of the white population.

3.19 per 10,000 of the colored population.

APRIL.—Number of deaths reported, 102, as compared with 89 in March. Of these deaths, 63 occurred in white persons, and 39 occurred in colored persons. With regard to sex, 42 were males, and 60 females. Nine deaths occurred in institutions. The youngest decedent was a colored female child, aged 2 years; the oldest was a white male, aged 87 years. The briefest period of illness was eight weeks; the longest, 20 years. The percentage of deaths from tuberculosis per 10,000 of the white population and of the colored population in the counties of Maryland is subjoined herewith:

1.07 per 10,000 of the white population.

2.64 per 10,000 of the colored population.

MAY.—Number of deaths reported, 94, as compared with 102 in April. Of these deaths, 56 occurred in white persons, and 38 occurred in colored persons. With regard to sex, 49 were males and 45 females. Three deaths occurred in institutions. The youngest decedent was a colored male child, aged 2 years; the oldest was a white female, aged 79 years. The briefest period of illness was one and a half weeks; the longest, 20 years. The percentage of deaths from tuberculosis per 10,000 of the white population and of the colored population in the counties of Maryland is subjoined herewith:

0.95 per 10,000 of the white population.

2.58 per 10,000 of the colored population.

JUNE.—Number of deaths reported 79, as compared with 94 in May. Of these deaths, 44 occurred in white persons and 35 in colored persons. With regard to sex, 32 were males and 47 females. One death occurred in a sanatorium. The oldest decedent was a colored female 80 years of age. The briefest period of illness was one week; the longest, 40 years. The percentage of deaths from tuberculosis per 10,000 of the white

population and of the colored population in the counties of Maryland is subjoined herewith:

0.75 per 10,000 of the white population.

2.31 per 10,000 of the white population.

JULY.—Number of deaths reported 72, as compared with 79 in June. Of these deaths, 47 occurred in white persons and 25 in colored persons. Of this number, 35 were females and 37 were males. The youngest decedent was a colored female 3 years of age. The briefest period of illness was 12 weeks; the longest, 388 weeks. The percentage of deaths from tuberculosis per 10,000 of white population and of the colored population in the counties of Maryland is subjoined herewith:

0.80 per 10,000 of the white population.

1.69 per 10,000 of the colored population.

AUGUST.—Number of deaths reported 77, as compared with 72 in July. Of these deaths, 53 were white and 24 were colored. Of this number of deaths, 42 were males and 35 females. The youngest decedent was a white male, 6 months of age. The briefest period of illness was 3 weeks; the longest, 520 weeks. The percentage of deaths from tuberculosis per 10,000 of white population and of the colored population in the counties of Maryland is subjoined herewith:

0.90 per 10,000 of the white population.

1.63 per 10,000 of the colored population.

SEPTEMBER.—Number of deaths reported 83, as compared with 77 in August. Of these deaths, 49 were white and 34 colored. Forty-three were males, and 40 females. The youngest decedent was a white male, 3 months of age. The briefest period of illness was one week. The briefest period of illness was one week; the longest, 1,040 weeks.

0.83 per 10,000 of the white population.

2.31 per 10,000 of the colored population.

OCTOBER.—Number of deaths reported 78, as compared with 83 in September. Of the deaths 38 were male and 40 females. Forty-eight were white and 30 colored. The youngest decedent was a colored female, 11 years of age. The oldest decedent was a white female, age 79 years. The briefest period of illness was 1 week. The longest period of illness was 520 weeks.

0.81 per 10,000 of the white population.

2.03 per 10,000 of the colored population.

NOVEMBER.—Number of deaths reported 85, as compared with 78 in October. Of these deaths, 41 were males and 44 females. Sixty-one were white and 24 colored. The youngest decedent was 6 months old. The oldest decedent was a colored male, 85 years of age. The briefest period of illness was 2 weeks. The longest period of illness was 416 weeks.

1.04 per 10,000 of the white population.

1.63 per 10,000 of the colored population.

DECEMBER.—Number of deaths reported 89, as compared with 85 in November. Of these deaths, 44 were males and 45 females. Fifty-seven were white and 32 colored. The youngest decedent was a white female, aged 3 years. The briefest period of illness was 8 weeks. The longest period of illness was 12 years.

0.97 per 10,000 of the white population.

2.17 per 10,000 of the colored population.

INFLUENZA.

JANUARY.—Deaths reported 20, as compared with 7 in the month of December. Twelve cases of sickness reported, as compared with 12 cases in the month of December. Eighteen of the decedents were white and 2 colored; 2 males and 18 females. No epidemic centre.

FEBRUARY.—Deaths reported 20, as compared with 20 in the month of January. Thirteen cases of sickness reported, as compared with 12 cases in the month of January. Eighteen of the decedents were white and 2 colored; 8 males and 12 females. No epidemic centre.

MARCH.—Deaths reported 20, as compared with 20 in the month of February. Twenty cases of sickness reported, as compared with 13 cases in the month of February. Fourteen of the decedents were white and 6 colored; 10 males and 10 females. Mild epidemic at Kensington, Montgomery county.

APRIL.—Deaths reported 9, as compared with 20 in the month of March. Two cases of sickness reported, as compared with 20 cases in the month of March. Five of the decedents were white and 4 colored; 6 males and 3 females.

MAY.—Deaths reported 7, as compared with 9 in the month of April. No cases of sickness reported, as compared with 2 cases in the month of April. Six of the decedents were white and 1 colored; 4 males and 3 females.

JUNE.—Deaths reported 7, as compared with 7 in May. No cases of sickness, as compared with no cases in May. Three of the decedents were white and 4 colored; 4 were males and 3 females.

JULY.—Two deaths reported, as compared to 7 in June. One case of sickness, as compared with no cases in June.

AUGUST.—One death was reported, as compared to 2 deaths in July. Four cases of sickness, as compared to one case in July.

SEPTEMBER.—No deaths reported, as compared to one death in August; no additional cases reported as against 4 in August.

OCTOBER.—Three deaths were reported and one additional case, as compared to no deaths and no additional cases in Sep-

tember. Of the three decedents two were white females and one was a colored male.

NOVEMBER.—Four deaths were reported and no additional cases, as against 3 deaths and one additional case in October. Of the four decedents 2 were males and 2 were females.

DECEMBER.—Ten deaths were reported, and eight additional cases, as against four deaths and no additional cases in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

INFLUENZA—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	20	31	36	21	90	198
February.....	20	45	33	19	62	179
March.....	20	46	43	42	42	193
April.....	9	30	17	46	23	125
May.....	7	15	7	18	13	60
June.....	7	4	5	10	5	31
July.....	2	4	6	4	3	19
August.....	1	2	0	2	2	7
September.....	0	2	0	4	4	10
October.....	3	1	3	0	2	9
November.....	4	7	6	6	3	26
December.....	10	7	10	7	11	45
Yearly Totals.....	103	194	166	179	260	902

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

INFLUENZA—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	12	6	76	0	1	95
February.....	13	5	3	3	0	24
March.....	20	18	0	0	15	53
April.....	2	0	4	13	1	20
May.....	0	0	0	4	0	4
June.....	0	0	0	1	0	1
July.....	1	0	0	0	0	1
August.....	4	0	0	0	0	4
September.....	0	0	0	0	0	0
October.....	1	0	7	0	0	8
November.....	0	0	0	0	0	0
December.....	8	12	2	0	0	22
Yearly Totals.....	61	41	92	21	17	232

MUMPS.

JANUARY.—No deaths and 16 cases of sickness reported, as against no deaths and 13 cases of sickness reported in December. Thirteen of the cases of sickness occurred in white persons, and 3 in colored persons, 8 were males and 8 were females.

FEBRUARY.—No deaths and 29 cases of sickness reported, as against no deaths and 16 cases of sickness reported in January. Twenty-six of the cases of sickness occurred in white persons, and 3 in colored persons, 11 were males and 18 were females.

MARCH.—No deaths and 14 cases of sickness reported, as against no deaths and 29 cases of sickness reported in February. Twelve of the cases of sickness occurred in white persons and 2 in colored persons; 7 were males and 7 were females.

APRIL.—One death and 14 cases of sickness reported, as against no deaths and 14 cases of sickness reported in March. Thirteen of the cases of sickness occurred in white persons, and 1 in a colored person; 9 were males and 5 females.

MAY.—No deaths and 4 cases of sickness reported, as against 1 death and 14 cases of sickness reported in April. Three of the cases of sickness occurred in white persons, and 1 in a colored person; 2 were males, and 2 were females.

JUNE.—No deaths and 8 cases of sickness reported, as compared with no deaths and 4 cases of sickness in May. All 8 of the cases occurred in white persons; 4 males and 4 females.

JULY.—No deaths reported, and one case of sickness reported, as compared with no deaths and 8 cases of sickness in June. The one case of sickness occurred in a white male.

AUGUST.—No deaths reported, and 5 cases of sickness reported, as compared to no deaths and one case of sickness in July.

SEPTEMBER.—No deaths reported and 3 cases of sickness reported, as compared to no deaths and 5 cases of sickness in August.

OCTOBER.—No deaths reported and 7 cases of sickness reported, as compared to no deaths and 3 cases of sickness in September.

NOVEMBER.—No deaths reported and 2 additional cases, as compared to no deaths and 7 additional cases in October.

DECEMBER.—No deaths reported and no additional cases, as compared to no deaths and 2 additional cases in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

**MUMPS—MONTHLY MORTALITY TABLE FOR THE YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.**

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	1	0	0	0	1
February.....	0	0	0	0	0	0
March.....	0	0	0	0	1	1
April.....	1	1	0	0	0	2
May.....	0	0	0	0	0	0
June.....	0	1	0	0	0	1
July.....	0	0	0	0	0	0
August.....	0	0	0	0	0	0
September.....	0	0	0	0	0	0
October.....	0	1	1	0	0	2
November.....	0	0	0	0	0	0
December.....	0	0	0	0	0	0
Yearly Totals.....	1	4	1	0	1	7

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

**MUMPS—MONTHLY MORBIDITY TABLE FOR THE YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.**

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	16	88	25	18	5	152
February.....	29	85	8	12	14	148
March.....	14	132	7	24	23	200
April.....	14	130	30	16	35	225
May.....	4	93	118	8	6	229
June.....	8	23	9	8	9	57
July.....	1	18	1	2	1	23
August.....	5	10	1	0	1	17
September.....	3	2	14	2	0	21
October.....	7	4	4	1	6	22
November.....	2	7	11	0	1	21
December.....	0	13	15	0	0	28
Yearly Totals.....	103	605	243	91	101	1143

CHICKENPOX.

JANUARY.—No deaths and 41 cases of sickness reported, as compared with no deaths and 58 cases of sickness reported in December. Forty of the cases of sickness occurred in white persons and 1 in a colored person; 19 were males, 21 females and in 1 instance the sex is not given.

FEBRUARY.—No deaths and 40 cases of sickness reported, as compared with no deaths and 41 cases of sickness reported in January. Thirty-five of the cases of sickness occurred in white persons, and 5 in colored persons; 22 were males, 16 were females and in 2 instances the sex is not given.

MARCH.—No deaths and 48 cases of sickness reported, as compared with no deaths and 40 cases of sickness reported in February. Forty-three of the cases of sickness occurred in white persons and 5 in colored persons; 27 were males, 19 females and in 2 instances the sex is not given.

APRIL.—No deaths and 13 cases of sickness reported, as compared with no deaths and 48 cases of sickness reported in March. All of the cases of sickness occurred in white persons; 6 were males and 7 were females.

MAY.—No deaths and 13 cases of sickness reported, as compared with no deaths and 13 cases of sickness reported in April. Twelve of the cases of sickness occurred in white persons and 1 in a colored person; 8 were males, 3 were females and in 2 instances the sex is unknown.

JUNE.—No deaths reported, but 6 cases of sickness, as compared with no deaths and 13 cases of sickness in May. Three of the cases occurred in white persons and the other three in colored persons; 3 were males and 3 females.

JULY.—There were no deaths reported, and 3 cases of sickness, as compared to no deaths and 6 cases of sickness in June. All 3 cases occurred in white persons, but 2 were males, and one in a female.

AUGUST.—There were no deaths reported, and 3 cases of sickness. Two of the cases occurred in males, and in one instance the sex is unknown; all 3 cases occurred in white persons.

SEPTEMBER.—There were no deaths reported and 2 additional cases. One case occurred in a male and one in a female. Both persons were white.

OCTOBER.—There were no deaths reported and 10 additional cases. Seven cases occurred in males and 3 in females. All 10 cases were white persons.

NOVEMBER.—There were no deaths reported and 30 additional cases. Nineteen cases occurred in males and 11 in females. All the cases occurred in white persons.

DECEMBER.—There were no deaths reported and 42 additional cases. Twenty-five cases occurred in males and 17 in females. Three cases were colored persons and the remainder were white persons.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

CHICKENPOX—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	1	1	0	1	3
February.....	0	1	0	0	0	1
March.....	0	0	0	1	0	1
April.....	0	0	0	1	0	1
May.....	0	1	0	1	0	2
June.....	0	0	0	0	0	0
July.....	0	0	1	0	0	1
August.....	0	0	0	0	0	0
September.....	0	0	0	0	0	0
October.....	0	0	0	0	1	1
November.....	0	0	0	0	0	0
December.....	0	0	0	0	0	0
Yearly Totals.....	0	3	2	3	2	10

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

CHICKENPOX—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	41	29	52	47	10	179
February.....	40	31	15	45	11	142
March.....	48	26	18	21	21	134
April.....	13	18	22	11	24	88
May.....	13	24	15	5	2	59
June.....	6	21	25	5	5	62
July.....	3	7	10	2	5	27
August.....	3	2	0	27	0	32
September.....	2	4	2	3	2	13
October.....	10	14	19	7	11	61
November.....	30	40	11	17	10	108
December.....	42	58	26	39	14	179
Yearly Totals.....	251	274	215	229	115	1084

WHOOPIING COUGH.

JANUARY.—Deaths reported, 13; additional cases reported, 38, as compared with 8 deaths and 67 cases of sickness reported in December. Of the 13 decedents, 7 were white and 6 colored; 6 were males and 7 females. A majority (all but 1) were children 2 years of age and under. The youngest was a white female aged 2 months. Twenty-eight of the morbidity cases were white and 10 colored; 14 were males, 15 were females and in 9 instances the sex is not stated.

FEBRUARY.—Deaths reported, 7; additional cases reported, 19, as compared with 13 deaths and 38 cases of sickness reported in January. Of the 7 decedents, 6 were white and 1 colored; 4 were males and 3 were females. The youngest was a white male aged 1 month. Eighteen of the morbidity cases were white and 1 colored; 9 were males and 10 were females.

MARCH.—Deaths reported, 8; additional cases reported, 39, as compared with 7 deaths and 19 cases of sickness reported in February. Of the 8 decedents, 4 were white and 4 colored; 4 were males, and 4 were females. All of the morbidity cases were white; 20 were males, 17 females and in 2 instances the sex is not given.

APRIL.—Deaths reported, 5; additional cases reported, 34; as compared with 8 deaths and 39 cases of sickness reported in March. Of the 5 decedents, 4 were white and 1 colored; 2 were males and 3 were females. Thirty-two of the morbidity cases were white and 2 colored; 17 were males and 17 females.

MAY.—Deaths reported, 7; additional cases reported, 98; as compared with 5 deaths and 34 cases of sickness reported in April. Of the 7 decedents, 4 were white and 3 colored; 2 were males and 5 were females. Ninety-seven of the morbidity cases were white and 1 colored; 40 were males, 44 females and in 14 cases the sex is unknown.

JUNE.—There were 9 deaths reported; additional cases reported, 80; as compared with 7 deaths and 98 cases of sickness in May. Of the 9 decedents, 4 were white and 5 were colored; 5 were males and 4 females. Seventy-six of the morbidity cases were white, 2 colored, and in 2 instances the color was unknown; 38 were males and 42 females.

JULY.—There were 12 deaths reported; additional cases reported, 34; as compared with 8 deaths and 80 cases of sickness in June. Of the 12 decedents, 4 were males, 8 females; 5 were white and 7 were colored. Thirty-three of the morbidity

cases were white and 1 colored; 16 were males, 9 were females, and in 9 instances the sex is unknown.

AUGUST.—There were 24 deaths reported; additional cases reported, 18; as compared with 12 deaths, and 34 additional cases in July. Of the 24 decedents, 11 were males and 13 females; 16 were white and 8 colored. Ten of the morbidity cases were white and 8 colored. Ten were males and 8 females.

SEPTEMBER.—There were 10 deaths reported; additional cases reported, 30; as compared with 24 deaths and 18 additional cases in August. Of the 10 decedents, 6 were males and 4 females; 9 were white and one colored. Seventeen of the morbidity cases were males, 10 were females, and in 3 instances the sex was unknown. Eighteen were white and 12 colored.

OCTOBER.—There was only one death reported; additional cases, 13; as compared to 10 deaths and 30 additional cases in September. The decedent was a white female. Six of the morbidity cases were males and 7 females. All thirteen were white persons.

NOVEMBER.—There were six deaths reported; additional cases, 17; as compared to 1 death and 13 cases in October. Four of the decedents were males and 2 were females. Seven of the morbidity cases were males and 10 were females.

DECEMBER.—There were nine deaths from this disease, compared to six in November. There were 21 cases reported, as against 17 last month.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

WHOOPIING COUGH—MONTHLY MORTALITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	13	18	21	6	11	69
February.....	7	12	14	3	6	42
March.....	8	16	11	7	17	59
April.....	5	10	19	5	10	49
May.....	7	25	27	16	15	90
June.....	9	6	23	12	12	62
July.....	12	16	15	10	12	65
August.....	24	16	20	18	8	86
September.....	10	14	21	13	8	66
October.....	1	14	19	9	0	43
November.....	6	13	14	6	1	40
December.....	9	8	16	13	3	49
Yearly Totals.....	111	168	220	118	103	720

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

WHOOPIING COUGH—MONTHLY MORBIDITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	38	33	73	22	9	175
February.....	19	36	74	8	103	240
March.....	39	37	41	100	92	309
April.....	34	24	23	2	38	121
May.....	98	60	47	38	6	249
June.....	80	63	281	22	2	448
July.....	34	41	23	31	18	147
August.....	18	39	56	24	15	152
September.....	30	29	27	35	15	136
October.....	13	17	26	21	24	101
November.....	17	7	39	13	9	85
December.....	21	67	24	39	24	175
Yearly Totals.....	441	453	734	355	355	2338

MEASLES.

JANUARY.—No deaths reported, as compared with one death in December. Cases of sickness reported 15, as compared with 9 in December. All of the morbidity cases were white; 10 were males and 5 were females.

FEBRUARY.—No deaths reported, as compared with none in January. Cases of sickness reported 100, as compared with 15 in January. All of the morbidity cases were white; 57 were males, 41 were females and in 2 instances the sex is not given.

MARCH.—Three deaths reported, as compared with none in February. Cases of sickness reported 168, as compared with 100 in February. One hundred and sixty-seven of the morbidity cases were white and 1 colored; 82 were males, 76 were females and in 10 instances the sex is not given.

APRIL.—Eight deaths reported, as compared with 3 in March. Cases of sickness reported 332, as compared with 168 in March. All of the mortality cases were white; 4 were males and 4 were females. All of the cases of sickness occurred in white persons; 157 were males, 145 were females and in 30 instances the sex is not stated.

MAY.—Six deaths reported, as compared with 8 in April. Cases of sickness reported 270, as compared with 332 in April. All of the mortality cases were white; 3 were males and 3 were females. Two hundred and sixty-eight of the cases of sickness

occurred in white persons and 2 in colored persons; 123 were males, 131 were females and in 16 instances the sex is not stated.

JUNE.—No deaths were reported, as compared to 6 in May. Cases of sickness reported 156, as compared to 270 in May. One hundred and forty-four of the cases of sickness occurred in white persons and 12 in colored persons; 68 were males and 76 females, and in 12 instances the sex is unknown.

JULY.—Three deaths were reported, as compared to no deaths in June. Ninety-one cases of sickness were reported, as compared with 156 in June.

AUGUST.—There were no deaths reported, as compared to 3 deaths in July. Fifty cases of sickness reported, as compared with 91 cases reported in July.

SEPTEMBER.—There were no deaths reported, as compared to no deaths in August. Two cases of sickness reported, as compared to 50 cases in August.

OCTOBER.—There were no deaths reported, as compared to no deaths in September. Nine cases of sickness reported, as against 2 cases in September.

NOVEMBER.—There were no deaths reported, as compared to no deaths in October. One hundred and eight cases were reported, as against 9 cases in October.

DECEMBER.—There were no deaths reported, as compared to no deaths in November. Three hundred and seventy-four cases were reported, as against 108 cases in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

MEASLES—MONTHLY MORTALITY TABLE FOR THE YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	2	5	12	2	21
February.....	0	3	7	12	6	28
March.....	3	4	6	11	3	27
April.....	8	21	2	14	26	71
May.....	6	6	3	9	8	32
June.....	0	5	2	7	2	16
July.....	3	2	4	2	5	16
August.....	0	1	1	2	2	6
September.....	0	0	1	1	0	2
October.....	0	0	0	3	3	6
November.....	0	0	4	0	0	4
December.....	0	1	2	6	6	15
Yearly Totals.....	20	45	37	79	63	244

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

MEASLES—MONTHLY MORBIDITY TABLE FOR THE YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	15	135	438	195	32	815
February.....	100	189	102	472	198	1061
March.....	168	429	168	463	715	1943
April.....	332	275	97	332	467	1503
May.....	270	322	235	271	368	1466
June.....	156	188	108	196	50	698
July.....	91	76	17	128	48	360
August.....	50	32	1	28	6	117
September.....	2	9	7	37	17	72
October.....	9	26	22	120	29	206
November.....	108	16	70	134	45	373
December.....	374	9	58	95	72	608
Yearly Totals.....	1675	1706	1323	2471	2047	9222

SCARLET FEVER.

JANUARY.—Deaths reported, 4; as compared with 3 in the month of December. One hundred and eleven cases of sickness reported, as compared with 97 cases in the month of December. Of the 4 decedents, 3 were males and 1 was a female.

FEBRUARY.—Deaths reported, 3; as compared with 4 in the month of February. Sixty-four cases of sickness reported, as compared with 111 cases in the month of January. Of the 3 decedents, 2 were males and 1 a female.

MARCH.—No deaths reported, as compared with 3 in the month of February. Fifty-nine cases of sickness reported, as compared with 64 cases in the month of February. All of the cases of sickness occurred in white persons; 27 were males and 32 were females.

APRIL.—One death reported, as compared with none in the month of March. Twenty-five cases of sickness reported, as compared with 59 cases in the month of March. The decedent was a colored male. Twenty-four cases of sickness occurred in white persons and 1 in a colored person; 10 were males and 15 were females.

MAY.—No deaths reported, as compared with one in the month of April. Fifteen cases of sickness reported, as compared with 25 cases in the month of April. All of the cases of

sickness occurred in white persons; 8 were males and 7 were females.

JUNE.—No deaths reported, as compared with none in the month of May. Ten cases of sickness reported, as compared with 15 cases in the month of May. All of the cases of sickness occurred in white persons; 4 were males and 6 were females.

JULY.—No deaths reported, as compared with none in the month of June. Forty-two cases of sickness reported, as compared with 10 in the month of June. All of the cases of sickness occurred in white persons; 23 were males and 19 were females.

AUGUST.—No deaths reported, as compared with none in the month of July. Fifteen cases of sickness reported, as compared with 42 in the month of July. All of the cases of sickness occurred in white persons; 6 were males and 9 were females.

SEPTEMBER.—One death reported, as compared with none in the month of August. Thirty-five cases of sickness reported, as compared with 15 cases in the month of August. The decedent was a white male. Thirty-three cases of sickness occurred in white persons and 2 in colored persons; 19 were males and 16 were females.

OCTOBER.—No deaths reported, as compared with 1 in the month of September. Ninety-four cases of sickness reported, as compared with 35 cases in the month of September. Ninety-three cases of sickness occurred in white persons and 1 in a colored person; 56 were males and 38 were females.

NOVEMBER.—Two deaths reported, as compared with 1 in the month of October. Seventy-one cases of sickness reported, as compared with 94 cases in the month of October. Both decedents were males. Sixty-nine cases of sickness occurred in white persons and 2 in colored persons; 33 were males and 38 were females.

DECEMBER.—No deaths reported, as compared with 2 in the month of November. Sixty-seven cases of sickness reported, as compared with 71 cases in the month of November. Sixty-six cases of sickness occurred in white persons and 1 in a colored person; 29 were males and 38 were females.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

SCARLET FEVER—MONTHLY MORTALITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Year</i>
	1912	1911	1910	1909	1908	
January.....	4	3	3	1	2	13
February.....	3	4	0	4	8	19
March.....	0	1	2	1	2	6
April.....	1	1	4	5	3	14
May.....	0	2	2	2	3	9
June.....	0	1	2	0	3	6
July.....	0	3	0	0	0	3
August.....	0	1	0	0	0	1
September.....	1	0	2	2	2	7
October.....	0	1	3	1	1	6
November.....	2	2	3	1	2	10
December.....	0	3	1	4	2	10
Yearly Totals.....	11	22	22	21	28	104

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

SCARLET FEVER—MONTHLY MORBIDITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	111	91	62	96	57	417
February.....	64	45	51	49	64	273
March.....	59	60	78	70	55	322
April.....	25	59	40	27	35	186
May.....	15	40	106	14	32	207
June.....	10	27	34	22	25	118
July.....	42	22	24	23	5	116
August.....	15	13	33	23	30	114
September.....	35	40	58	42	54	229
October.....	94	65	63	56	43	321
November.....	71	94	54	101	76	396
December.....	67	97	79	65	96	404
Yearly Totals.....	608	653	682	588	572	3103

DIPHThERIA.

JANUARY.—Number of deaths reported, 12; as compared with 10 in December. Additional cases reported, 101; as compared with 117 in December. Nine of the decedents were white, and 3 colored; 6 were males and 6 were females. Ninety-nine of the cases of sickness occurred in white persons and 2 in colored persons; 49 were males, 48 were females and in 4 instances the sex is not stated.

FEBRUARY.—Number of deaths reported, 7; as compared with 12 in January. Additional cases reported, 73; as compared with 101 in January. Six of the decedents were white and 1 colored; 4 were males and 3 were females. Seventy of the cases of sickness occurred in white persons and 3 in colored persons; 33 were males, 38 were females and in 2 instances the sex is not stated.

MARCH.—Number of deaths reported, 15; as compared with 7 in February. Additional cases reported, 41; as compared with 73 in February. Twelve of the decedents were white and 3 colored; 7 were males and 8 were females. Thirty-seven of the cases of sickness occurred in white persons and 4 in colored persons; 21 were males and 20 were females.

APRIL.—Number of deaths reported, 6; as compared with 15 in March. Additional cases reported, 39; as compared with 41 in March. All of the decedents were white; 4 were males and 2 were females. Thirty-seven of the cases of sickness occurred in white persons and 2 in colored persons; 19 were males and 20 females.

MAY.—Number of deaths reported, 3; as compared with 6 in April. Additional cases reported, 22; as compared with 39 in April. All of the decedents were white; 2 were males and 1 was a female. All of the cases of sickness occurred in white persons; 10 were males, 11 were females and in 1 instance the sex is not given.

JUNE.—Number of deaths reported, 4; as compared with 3 in May. Additional cases reported, 16; as compared to 22 in May. Three of the decedents were white and 1 colored; 2 males and 2 females. Thirteen of the cases of sickness occurred in white persons, 2 in colored and in 1 instance the color was not stated; 8 were males and 8 females.

JULY.—One death reported, as compared with 4 in June. Additional cases, 31; as compared to 16 in June. Of the cases of sickness, 30 occurred in white persons and 1 in a colored person; 14 were males and 17 were females.

AUGUST.—Eight deaths reported, as compared to 1 death in July. Additional cases reported, 49; as compared with 31 in July. Of the cases of sickness, 23 occurred in males and 26 in females. Forty-eight occurred in white persons and 1 in a colored person.

SEPTEMBER.—Eight deaths reported, as compared to the same number in August. Additional cases, 59; as compared to 49 in August. Twenty of the cases were males, 35 females and in 4 instances the sex is unknown. Fifty-seven of the cases were white and 2 colored.

OCTOBER.—Nine deaths reported, as compared to 8 in September. Additional cases reported, 109; as compared to 59 in September. Fifty-two of the cases were males and 57 were females. One hundred and four persons white and 5 colored.

NOVEMBER.—Nineteen deaths were reported, as compared to nine deaths in October. Additional cases reported, 138; as compared to 109 in October. One hundred and twenty-nine of the cases were white persons and 9 were colored.

DECEMBER.—Sixteen deaths were reported, as compared to 19 deaths in November. Additional cases reported, 106; as compared to 138 in the preceding month. Ninety-two of the cases were white and 14 colored.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

DIPHTHERIA—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	12	17	6	13	9	57
February.....	7	11	8	6	13	45
March.....	15	11	10	11	8	55
April.....	6	8	4	8	14	40
May.....	3	4	5	4	6	22
June.....	4	2	5	3	7	21
July.....	1	3	3	3	3	13
August.....	8	7	7	2	6	30
September.....	8	4	11	9	6	38
October.....	9	11	9	9	14	52
November.....	19	7	15	12	16	69
December.....	16	10	22	9	18	75
Yearly Totals.....	108	95	105	89	120	517

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

**DIPHTHERIA—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.**

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	101	92	53	72	50	368
February.....	73	65	48	46	42	274
March.....	41	64	27	40	53	225
April.....	39	38	19	43	31	170
May.....	22	28	30	23	36	139
June.....	16	24	33	20	30	123
July.....	31	31	17	22	21	122
August.....	49	26	24	36	22	157
September.....	59	54	63	45	93	314
October.....	109	127	110	106	117	569
November.....	138	117	76	101	77	509
December.....	106	117	100	60	70	453
Yearly Totals.....	784	783	600	614	642	3423

SMALLPOX.

JANUARY.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in December.

FEBRUARY.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in January.

MARCH.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in February.

APRIL.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in March.

MAY.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in April.

JUNE.—No deaths and no cases of sickness reported, as compared to no deaths and no cases of sickness in May.

JULY.—No deaths reported and no cases of sickness reported, as compared to no deaths and no cases of sickness in June.

AUGUST.—No deaths and no cases of sickness reported, as compared to no deaths and no cases of sickness in July.

SEPTEMBER.—No deaths reported and no cases of sickness, as compared to no deaths and no cases of sickness in August.

OCTOBER.—No deaths reported and no cases of sickness, as compared to no deaths and no cases of sickness in September.

NOVEMBER.—No deaths reported and 11 cases of sickness, as compared to no deaths and no cases of sickness in October.

DECEMBER.—No deaths reported and 9 cases of sickness, as compared to no deaths and 11 cases of sickness in November.

There were no deaths from smallpox in the counties of Maryland, in the five-year group under consideration; and hence I have omitted the accustomed table "Smallpox, monthly mortality table for the year 1912; with comparative figures for 1911, 1910, 1909 and 1908".

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

**SMALLPOX—MONTHLY MORBIDITY TABLE, FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.**

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	8	1	0	3	12
February.....	0	4	0	0	0	4
March.....	0	0	0	1	7	8
April.....	0	5	0	8	3	16
May.....	0	9	4	0	11	24
June.....	0	4	1	0	8	13
July.....	0	1	0	0	0	1
August.....	0	0	0	0	0	0
September.....	0	0	0	0	0	0
October.....	0	0	0	3	1	4
November.....	11	0	0	0	0	11
December.....	9	0	0	4	0	13
Yearly Totals.....	20	31	6	16	33	106

PELLAGRA.

JANUARY.—Two deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in December.

FEBRUARY.—No deaths and no cases of sickness reported, as against 2 deaths and no cases of sickness reported in January.

MARCH.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in February.

APRIL.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in March.

MAY.—One death and no cases of sickness reported, as against no deaths and no cases of sickness reported in April.

JUNE.—One death and no cases of sickness reported, as against one death and no cases of sickness in May.

JULY.—No deaths and no cases of sickness reported, as compared to one death and no cases of sickness in June.

AUGUST.—No deaths reported from this disease, and no cases of sickness, as compared with no deaths and no cases of sickness in July.

SEPTEMBER.—No deaths reported and no cases of sickness reported, as compared to no deaths and no cases of sickness in August.

OCTOBER.—No deaths reported, and no cases of sickness, as compared to no deaths and no cases of sickness in September.

NOVEMBER.—No deaths reported, and no cases of sickness, as compared to no deaths and no cases of sickness in October.

DECEMBER.—One death reported, as against no deaths in November. No cases of sickness, as compared to no cases of sickness in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

PELLAGRA—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	2	0	0	0	0	2
February.....	0	2	0	0	0	2
March.....	0	0	1	0	0	1
April.....	0	0	0	0	0	0
May.....	1	0	0	0	0	1
June.....	1	1	1	0	0	3
July.....	0	1	0	0	0	1
August.....	0	0	0	0	0	0
September.....	0	1	1	0	0	2
October.....	0	1	0	0	0	1
November.....	0	0	0	1	0	1
December.....	1	0	1	0	0	2
Yearly Totals.....	5	6	4	1	0	16

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

PELLAGRA—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	2	0	0	0	2
February.....	0	0	0	0	0	0
March.....	0	0	0	0	0	0
April.....	0	0	0	0	0	0
May.....	0	0	0	0	0	0
June.....	0	0	0	0	0	0
July.....	0	1	0	0	0	1
August.....	0	0	0	0	0	0
September.....	0	0	0	0	0	0
October.....	0	0	0	0	0	0
November.....	0	0	0	0	0	0
December.....	0	0	0	0	0	0
Yearly Totals.....	0	3	0	0	0	3

ANTERIOR POLIOMYELITIS.

JANUARY.—Two deaths and no cases of sickness reported, as against 3 deaths and 3 cases of sickness reported in December.

FEBRUARY.—No deaths and no cases of sickness reported, as against 2 deaths and no cases of sickness reported in January.

MARCH.—One death and no cases of sickness reported, as against no deaths and no cases of sickness reported in February.

APRIL.—Two deaths and no cases of sickness reported, as against 1 death and no cases of sickness reported in March. Of the decedents one was white and one colored; one female and one male.

MAY.—One death and one case of sickness reported, as against 2 deaths and no cases of sickness reported in April.

JUNE.—No deaths and no cases of sickness reported, as against one death and one case of sickness in May.

JULY.—Three deaths and seven cases of sickness reported, as against no deaths and no cases of sickness reported in June.

AUGUST.—Three deaths and ten cases of sickness reported, as against three deaths and seven cases of sickness reported in July. Of the decedents one was white and two colored; one female and two males.

SEPTEMBER.—Two deaths and no cases of sickness reported, as against three deaths and ten cases of sickness reported in August.

OCTOBER.—One death and three cases of sickness reported, as against two deaths and no cases of sickness reported in September. This decedent was a white female. The three morbidity cases are white females.

NOVEMBER.—No deaths and one case of sickness reported, as against one death and three cases of sickness reported in October.

DECEMBER.—One death and four cases of sickness reported, as against no deaths and one case of sickness reported in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

ANTERIOR POLIOMYELITIS—MONTHLY MORTALITY TABLE
FOR YEAR 1912: WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years</i>
	1912	1911	1910	1909	1908	
January.....	2	2	0	0	0	4
February.....	0	2	0	0	0	2
March.....	1	1	0	0	0	2
April.....	2	1	0	0	0	3
May.....	1	2	0	0	0	3
June.....	0	0	0	0	0	0
July.....	3	3	4	0	0	10
August.....	3	0	10	0	0	13
September.....	2	1	3	0	0	6
October.....	1	4	6	0	0	11
November.....	0	3	3	0	0	6
December.....	1	3	4	0	0	8
Yearly Totals.....	16	22	30	0	0	68

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

ANTERIOR POLIOMYELITIS—MONTHLY MORBIDITY TABLE
FOR YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	2	0	0	0	2
February.....	0	0	0	0	0	0
March.....	0	0	0	0	0	0
April.....	0	0	0	0	0	0
May.....	1	1	0	0	0	2
June.....	0	0	0	0	0	0
July.....	7	0	1	0	0	8
August.....	10	0	9	0	0	19
September.....	6	0	11	0	0	17
October.....	3	3	7	0	0	13
November.....	1	3	5	0	0	9
December.....	4	3	0	0	0	7
Yearly Totals.....	32	12	33	0	0	77

ERYSIPELAS.

JANUARY.—Three deaths reported, as compared with none in December. Six cases of sickness reported, as compared with two in December. All were white; 2 males and 4 females.

FEBRUARY.—One death reported, as compared with three in January. No cases of sickness reported, as compared with 6 in January. The decedent was a colored male.

MARCH.—Two deaths reported, as compared with 1 in February. One case of sickness reported, as compared with none in February. The case reported was a white female.

APRIL.—No deaths reported, as compared with 2 in March. Three cases of sickness reported, as compared with 1 in March. The 3 cases reported were white males.

MAY.—Two deaths reported, as compared with none in April. Two cases of sickness reported, as compared with 3 in April. The 2 cases reported, were both white; 1 male and 1 female.

JUNE.—Three deaths reported, as compared with 2 in May. One case of sickness reported, as against 2 cases in May. The one case reported was a white female.

JULY.—No deaths reported, as compared with 3 in June. One case of sickness reported, as against one case in June. The one case reported was a white male.

AUGUST.—Two deaths reported and no cases of sickness, as against no deaths and one case of sickness in July.

SEPTEMBER.—No deaths reported and 2 cases of sickness, as against 2 deaths and no cases of sickness in August.

OCTOBER.—There were no deaths reported and one additional case, as compared to no deaths and 2 cases of sickness in September.

NOVEMBER.—There was one death reported and one additional case, as compared to no deaths and one additional case in October.

DECEMBER.—There were two deaths reported and no additional cases, as compared to one death and one additional case in November. These two deaths occurred in white females.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

ERYSIPELAS—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	3	8	2	1	0	14
February.....	1	3	5	0	0	9
March.....	2	2	4	1	0	9
April.....	0	2	1	2	0	5
May.....	2	1	1	0	3	7
June.....	3	4	2	3	3	15
July.....	0	0	0	1	0	1
August.....	2	3	2	1	1	9
September.....	0	0	0	1	0	1
October.....	0	0	3	2	0	5
November.....	1	0	2	3	4	10
December.....	2	0	2	2	1	7
Yearly Totals.....	16	23	24	17	12	92

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

ERYSIPELAS—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	6	4	0	0	0	10
February.....	0	0	4	0	0	4
March.....	1	1	3	2	2	9
April.....	3	2	0	2	1	8
May.....	2	2	1	1	0	6
June.....	1	0	4	4	0	9
July.....	1	1	0	2	1	5
August.....	0	2	1	1	0	4
September.....	2	1	0	0	0	3
October.....	1	0	0	2	1	4
November.....	1	0	2	4	3	10
December.....	0	2	0	0	1	3
Yearly Totals.....	18	15	15	18	9	75

MENINGITIS.

JANUARY.—Seven deaths and 1 case of sickness reported, as against 3 deaths and 3 cases of sickness reported in December. Six of the decedents were white and one colored; 5 were males and 2 females.

FEBRUARY.—Seven deaths and no cases of sickness reported, as against 7 deaths and 1 case of sickness reported in January. Four of the decedents were white and 3 colored; 4 were males and 3 females.

MARCH.—Four deaths and no cases of sickness reported, as against 7 deaths and no cases of sickness reported in February. Three of the decedents were white and 1 colored; 3 were males and 1 female.

APRIL.—Three deaths and one case of sickness reported, as against 4 deaths and no cases of sickness reported in March. All of the decedents were white; 2 were males and 1 female.

MAY.—Three deaths and no cases of sickness reported, as against 3 deaths and 1 case of sickness reported in April. Two of the decedents were white and 1 colored; 1 male and 2 females.

JUNE.—There were 5 deaths reported and no case of sickness, as against 3 deaths and no cases of sickness in May. Three of the decedents were males, and 2 were females. All five were white persons.

JULY.—There were 11 deaths reported and no cases of sickness, as against 5 deaths and no cases of sickness in June. Eight of the decedents were males and 3 females. Ten were white and 1 was colored.

AUGUST.—There were 13 deaths reported, and 1 case of sickness, as compared with 11 deaths and no cases of sickness in July. Seven of the decedents were males and 6 were females. Eleven were white persons and 2 colored.

SEPTEMBER.—There were 15 deaths reported and 1 case of sickness in September. Ten of the decedents were males and 5 were females. Twelve were white and 3 colored.

OCTOBER.—There were 4 deaths reported and no cases of sickness. One of the deaths occurred in a male and the other 3 in females. Two of the decedents were white and two colored.

NOVEMBER.—There were 8 deaths reported and no cases of sickness. Three of the decedents were males and 5 females. Four were white and 4 were colored.

DECEMBER.—There were 10 deaths reported and two cases of sickness. Seven of the decedents were males and 3 were females. Six were white and four were colored.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

**MENINGITIS—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.**

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	7	11	6	2	0	26
February.....	7	6	4	13	0	30
March.....	4	5	8	12	0	29
April.....	3	6	10	7	0	26
May.....	3	2	5	5	5	20
June.....	5	2	4	7	12	30
July.....	11	9	13	10	8	51
August.....	13	7	4	12	13	49
September.....	15	7	8	8	15	53
October.....	4	3	8	5	8	28
November.....	8	2	1	7	8	26
December.....	10	3	8	6	8	35
Yearly Totals.....	90	63	79	94	77	403

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

**MENINGITIS—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.**

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	1	0	0	2	0	3
February.....	0	1	0	0	0	1
March.....	0	1	0	0	0	1
April.....	1	1	0	0	2	4
May.....	0	0	1	0	1	2
June.....	0	0	0	1	1	2
July.....	0	2	1	2	1	6
August.....	1	0	0	0	1	2
September.....	1	0	0	0	0	1
October.....	0	0	0	0	0	0
November.....	0	0	0	1	0	1
December.....	2	3	0	0	2	7
Yearly Totals.....	6	8	2	6	8	30

MALARIA.

JANUARY.—No deaths and no cases of sickness reported, as against 1 death and 2 cases of sickness reported in December.

FEBRUARY.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in January.

MARCH.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in February.

APRIL.—No deaths and 1 case of sickness reported, as against no deaths and no cases of sickness reported in March.

MAY.—One death and one case of sickness reported, as against no deaths and 1 case of sickness reported in April.

JUNE.—There were four deaths and two cases of sickness reported, as against 1 death and 1 case of sickness in May.

JULY.—There was 1 death and no cases of sickness reported, as against 4 deaths and two cases of sickness in June.

AUGUST.—There were no deaths reported and 1 additional case, as against 1 death and no cases of sickness in July.

SEPTEMBER.—There were 4 deaths reported and 5 additional cases, as compared to no deaths and 1 additional case in August.

OCTOBER.—Four deaths were reported and 3 additional cases, as compared to 4 deaths and 5 additional cases in September.

NOVEMBER.—Two deaths were reported and no additional cases, as compared to 4 deaths and 3 additional cases in October.

DECEMBER.—No deaths were reported and 1 additional case, as compared to 2 deaths and no additional cases in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

MALARIA—MONTHLY MORTALITY TABLE FOR THE YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	1	0	0	0	1
February.....	0	0	1	3	0	4
March.....	0	0	1	1	0	2
April.....	0	0	0	1	0	1
May.....	1	2	3	2	1	9
June.....	4	2	1	2	2	11
July.....	1	0	2	1	0	4
August.....	0	0	1	1	2	4
September.....	4	1	4	3	1	13
October.....	4	1	1	2	3	11
November.....	2	2	1	2	2	9
December.....	0	1	1	1	0	3
Yearly Totals.....	16	10	16	19	11	72

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

MALARIA—MONTHLY MORBIDITY TABLE FOR THE YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	0	0	0	0	0
February.....	0	0	0	0	0	0
March.....	0	3	0	0	0	3
April.....	1	2	0	0	0	3
May.....	1	1	1	0	0	3
June.....	2	5	0	0	1	8
July.....	0	0	0	0	1	1
August.....	1	6	0	0	0	7
September.....	5	5	3	4	0	17
October.....	3	2	2	1	6	14
November.....	0	1	1	0	0	2
December.....	1	2	0	0	0	3
Yearly Totals.....	14	27	7	5	8	61

SEPTICEMIA.

JANUARY.—Three deaths and no cases of sickness reported, as against 9 deaths and no cases of sickness reported in December. Two of the decedents were white and 1 colored; 1 was a male and 2 were females.

FEBRUARY.—Two deaths and 2 cases of sickness reported, as against 3 deaths and no cases of sickness reported in January. Both of the decedents were colored males.

MARCH.—Six deaths and no cases of sickness reported, as against 2 deaths and 2 cases of sickness reported in February. Four of the decedents were white and 2 colored; 3 were males and 3 females.

APRIL.—Three deaths and no cases of sickness reported, as against 6 deaths and no cases of sickness reported in March. All three of the decedents were colored; 1 male and 2 females.

MAY.—Three deaths and no cases of sickness reported, as against 3 deaths and no cases of sickness reported in April. Two of the decedents were white males, and one was a white female.

JUNE.—There were 3 deaths reported and no cases of sickness reported, as against 3 deaths and no cases of sickness in May. Two of the decedents were white males and one white female.

JULY.—There was one death reported and no cases of sickness, as compared to 3 deaths and no cases of sickness in June. The one decedent was a colored male.

AUGUST.—There were 4 deaths reported and one case of sickness, as compared to 1 death and no cases of sickness in July. Two of the decedents were males and 2 were females. Two were white and 2 were colored persons.

SEPTEMBER.—There were 5 deaths reported and 1 case of sickness, as against 4 deaths and 1 case of sickness in August. Three of the decedents were males and two females. Four were white and 1 colored.

OCTOBER.—There were 6 deaths reported and no cases of sickness, as against 5 deaths and 1 case of sickness in September. All of the decedents were females; five were white and 1 was colored.

NOVEMBER.—There were 6 deaths reported and no cases of sickness, as against 6 deaths and no cases of sickness in October. One of the decedents was a male and five were females; four were white and 2 were colored.

DECEMBER.—There were no deaths reported and no cases of sickness, as compared to six deaths and no cases of sickness in November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

SEPTICEMIA—MONTHLY MORTALITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	3	3	5	3	0	14
February.....	2	3	3	3	0	11
March.....	6	7	6	3	0	22
April.....	3	2	5	5	0	15
May.....	3	6	4	6	0	19
June.....	3	3	8	1	1	16
July.....	1	6	2	5	7	21
August.....	4	7	3	1	0	15
September.....	5	4	3	0	10	22
October.....	6	4	0	5	5	20
November.....	6	9	10	6	5	36
December.....	0	9	6	4	10	29
Yearly Totals.....	42	63	55	42	38	240

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

SEPTICEMIA—MONTHLY MORBIDITY TABLE FOR YEAR 1912;
WITH COMPARATIVE FIGURES FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	0	0	0	0	0
February.....	2	0	0	2	0	4
March.....	0	0	0	0	0	0
April.....	0	0	0	0	0	0
May.....	0	0	0	0	0	0
June.....	0	0	0	1	0	1
July.....	0	0	0	0	0	0
August.....	1	0	0	0	0	1
September.....	1	0	0	0	0	1
October.....	0	0	0	0	0	0
November.....	0	1	1	0	0	2
December.....	0	0	0	0	0	0
Yearly Totals.....	4	1	1	3	0	9

GERMAN MEASLES.

JANUARY.—No deaths and no cases of sickness reported, as against no deaths and 3 cases of sickness reported in December.

FEBRUARY.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in January.

MARCH.—No deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in February.

APRIL.—No deaths and 2 cases of sickness reported, as against no deaths and no cases of sickness reported in March.

MAY.—No deaths and 9 cases of sickness reported, as against no deaths and 2 cases of sickness reported in April.

JUNE.—No deaths reported and no cases of sickness as against no deaths and 9 cases of sickness in May.

JULY.—There were no deaths and no cases of sickness from this disease, as compared to no deaths and no cases of sickness in June.

AUGUST.—There were no deaths and no cases of sickness from this disease, as compared to no deaths and no cases of sickness in July.

SEPTEMBER.—There were no deaths and no cases of sickness this month, as against no deaths and no cases of sickness in August.

OCTOBER.—There were no deaths and no cases of sickness, as compared to no deaths and no cases of sickness in September.

NOVEMBER.—There were no deaths and no cases of sickness, as compared to no deaths and no cases of sickness in October.

DECEMBER.—There were no deaths reported and no additional cases reported, as compared to no deaths and no cases of sickness in November.

As there was but one death from German measles in the five-year period under consideration, said death occurring in April, 1908, the regulation mortality table for this disease has been omitted.

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

GERMAN MEASLES—MONTHLY MORBIDITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	0	3	3	0	6
February.....	0	1	1	5	15	22
March.....	0	0	40	0	37	77
April.....	2	1	10	2	17	32
May.....	9	3	1	0	2	15
June.....	0	0	0	0	0	0
July.....	0	0	0	1	0	1
August.....	0	0	0	3	0	3
September.....	0	0	0	3	0	3
October.....	0	5	0	3	1	9
November.....	0	0	1	1	1	3
December.....	0	3	0	0	0	3
Yearly Totals.....	11	13	56	21	73	174

ACUTE DYSENTERY.

JANUARY.—No cases of sickness reported, as against none in the month of December.

FEBRUARY.—No cases of sickness reported, as against none in the month of January.

MARCH.—No cases of sickness reported, as against none in the month of February.

APRIL.—No cases of sickness reported, as against none in the month of March.

MAY.—One death and no cases of sickness reported, as against no deaths and no cases of sickness reported in April. The decedent was a white male.

JUNE.—One death and no cases of sickness reported, as against 1 death and no cases of sickness reported in May. The decedent was a white female.

JULY.—There were 8 deaths reported, and no cases of sickness, as against 1 death and no cases of sickness reported in the month of June. Of the decedents, 6 were white and 2 colored; 5 were males and 3 were females.

AUGUST.—No cases of sickness reported, as against 8 deaths and no cases of sickness reported in the month of July.

SEPTEMBER.—No cases of sickness reported, as against none in the month of August.

OCTOBER.—No cases of sickness reported, as against none in the month of August.

NOVEMBER.—Two deaths reported, and no cases of sickness, as against no deaths and no cases of sickness reported, in the month of October.

DECEMBER.—One death reported and no cases of sickness, as against two deaths and no cases of sickness reported, in the month of November.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

ACUTE DYSENTERY—MONTHLY MORTALITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	0	0	0	0	0
February.....	0	0	0	0	0	0
March.....	0	0	0	0	0	0
April.....	0	0	0	0	0	0
May.....	1	0	0	0	0	1
June.....	1	0	0	0	0	1
July.....	8	0	0	0	0	8
August.....	10	0	0	0	0	10
September.....	4	0	0	0	0	4
October.....	3	0	0	0	0	3
November.....	2	0	0	0	0	2
December.....	1	0	0	0	0	1
Yearly Totals.....	30	0	0	0	0	30

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

ACUTE DYSENTERY—MONTHLY MORBIDITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	0	0	0	0	0	0
February.....	0	0	0	0	0	0
March.....	0	0	0	0	0	0
April.....	0	0	0	0	0	0
May.....	0	0	0	0	0	0
June.....	0	0	0	0	0	0
July.....	0	0	0	0	0	0
August.....	1	3	0	0	0	4
September.....	0	0	0	0	0	0
October.....	0	0	0	0	0	0
November.....	0	0	0	0	0	0
December.....	0	0	0	0	0	0
Yearly Totals.....	1	3	0	0	0	4

TYPHOID FEVER.

JANUARY.—Deaths reported, 19; as compared with 31 in December. Additional cases reported, 118; as compared with 175 in December. Fifteen of the decedents were white and 4 colored; 14 were males and 5 females. Of the cases of sickness, 108 were white, 9 colored and in 1 instance the color is not given; 58 were males, 55 females and in 5 instances the sex is not stated. The youngest decedent was a colored male aged 5 years.

FEBRUARY.—Deaths reported, 9; as compared with 19 in January. Additional cases reported, 57; as compared with 118 in January. Eight of the decedents were white and 1 colored; 4 were males and 5 were females. Of the cases of sickness, 53 were white and 4 colored; 25 were males, 30 females and in 2 instances the sex is not stated. The youngest decedent was a white female, aged 8 months.

MARCH.—Deaths reported, 13; as compared with 9 in February. Additional cases reported, 54; as compared with 57 in February. Nine of the decedents were white and 4 colored; 7 were males and 6 females. Of the cases of sickness, 50 were white and 4 colored; 28 were males and 26 females. The youngest decedent was a white female, aged 2 years.

APRIL.—Deaths reported, 13; as compared with 13 in March. Additional cases reported, 54; as compared with 54 in March. Nine of the decedents were white and 4 colored; 8 were males and 5 females. Of the cases of sickness, 53 were white and 1 colored; 31 were males and 23 females.

MAY.—Deaths reported, 7; as compared with 13 in April. Additional cases reported, 35; as compared with 54 in March. Five of the decedents were white and 2 colored; 6 were males and 1 female. Of the cases of sickness, 34 were white and 1 colored; 21 were males, 11 females and 3 instances the sex is unknown.

JUNE.—Deaths reported, 3; as compared with 7 in May. Additional cases reported, 51; as compared with 35 in May. The three decedents were colored; 2 were males and 1 female.

JULY.—There were 12 deaths reported, as compared to 3 in June. Additional cases, 150; as compared to 51 in June. Seven of the decedents were white and 5 colored; 10 were males and 2 females.

AUGUST.—There were 23 deaths reported, as compared to 12 in July. Additional cases, 359; as compared to 150 in July. Seventeen of the decedents were white and 6 colored; 9 were males and 14 females.

SEPTEMBER.—There were 33 deaths reported, as compared to 23 in August. Additional cases, 299; as compared to 359 in August. Fourteen of the decedents were males and 19 were females. Nineteen were white persons and 14 colored.

OCTOBER.—There were 35 deaths reported, as compared to 33 in September. Additional cases, 337; as compared to 299 in September. Nineteen of the decedents were males and 16 were females; 24 were white and 11 were colored persons.

NOVEMBER.—There were 32 deaths reported, as compared to 35 in October. Additional cases, 172; as compared to 239 in October. Seventeen of the decedents were males and 15 were females; 20 were white and 12 were colored persons.

DECEMBER.—There were 30 deaths reported, as compared to 32 in November. Additional cases, 109; as compared to 172 in November. Eighteen of the decedents were males and 12 were females; nineteen were white and 11 were colored persons.

A summary of the monthly mortality figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

TYPHOID FEVER—MONTHLY MORTALITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Deaths.</i>					<i>Total Mortality for the Five Years</i>
	1912	1911	1910	1909	1908	
January.....	19	19	24	12	28	102
February.....	9	13	13	9	20	64
March.....	13	20	15	8	10	66
April.....	13	11	19	10	15	68
May.....	7	17	17	8	8	57
June.....	3	11	13	11	15	53
July.....	12	18	17	30	33	110
August.....	23	47	35	48	55	208
September.....	33	59	47	52	60	251
October.....	35	51	35	49	40	210
November.....	32	52	36	40	39	199
December.....	30	31	38	17	27	143
Yearly Totals.....	229	349	309	294	350	1531

A summary of the monthly morbidity figures for the year 1912, with comparative monthly statistics for 1911, 1910, 1909 and 1908 will next be given, in tabular form:

TYPHOID FEVER—MONTHLY MORBIDITY TABLE FOR THE
YEAR 1912; WITH COMPARATIVE FIGURES
FOR 1911, 1910, 1909 AND 1908.

<i>Month.</i>	<i>Number of Cases of Sickness.</i>					<i>Total Morbidity for the Five Years.</i>
	1912	1911	1910	1909	1908	
January.....	118	73	52	72	47	362
February.....	57	56	50	21	36	220
March.....	54	44	77	25	42	242
April.....	54	39	33	25	25	176
May.....	35	44	55	31	20	185
June.....	51	65	75	62	70	323
July.....	150	163	133	358	215	1019
August.....	359	347	521	401	402	2030
September.....	299	436	498	432	363	2028
October.....	337	332	420	291	217	1597
November.....	172	206	246	178	132	934
December.....	109	175	188	81	78	631
Yearly Totals.....	1795	1980	2348	1977	1647	9747

**REPORTED CASES AND DEATHS FROM COMMUNICABLE DISEASES—
RURAL MARYLAND, 1912.**

DISEASE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Jan. 1 to Dec. 31
Tuberculosis.....	100 *	97 *	89 *	102 *	94 *	79 *	72 *	77 *	83 *	78 *	85 *	89 *	1045 *
Measles	0 15	0 100	3 168	8 332	6 270	0 156	3 91	0 50	0 2	0 9	0 108	0 374	20 1675
Whooping-Cough ..	13 38	7 19	8 39	5 34	7 98	9 80	12 34	24 18	10 30	1 13	6 17	9 21	111 441
Scarlet Fever.....	4 111	3 64	0 59	1 25	0 15	0 10	0 42	0 15	1 35	0 94	2 71	0 67	11 608
Typhoid Fever....	19 118	9 57	13 54	13 54	7 35	3 51	12 150	23 359	33 299	35 337	32 172	30 109	229 1795
Diphtheria..	12 101	7 73	15 41	6 39	3 22	4 16	1 31	8 49	9 59	9 109	19 138	16 106	108 784
Influenza	20 12	20 13	20 20	9 2	7 0	7 0	2 1	1 4	0 0	3 1	4 0	10 8	103 61
Chicken-Pox	0 41	0 40	0 48	0 13	0 13	0 6	0 3	0 3	0 2	0 10	0 30	0 42	0 251
Mumps.....	0 16	0 29	0 14	1 14	0 4	0 8	0 1	0 5	0 3	0 7	0 2	0 0	1 103
Small-Fox	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 11	0 9	0 20
German Measles...	0 0	0 0	0 0	0 2	0 9	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 11
Malaria.	0 0	0 0	0 0	0 1	1 1	4 2	1 0	0 1	4 5	4 3	2 0	0 1	16 14
Pellagra	2 0	0 0	0 0	0 0	1 0	1 0	0 0	0 0	0 0	0 0	0 0	1 0	5 0
Anterior-Poliomy- elitis.....	2 0	0 0	1 0	2 0	1 1	0 0	3 7	3 10	2 6	1 3	0 1	1 4	16 32
Septicemia.....	3 0	2 2	6 0	3 0	3 0	3 0	1 0	4 1	5 1	6 0	6 0	0 0	42 4
Acute Dysentery..	0 0	0 0	0 0	0 0	1 0	1 0	8 0	10 1	4 0	3 0	2 0	1 0	30 1
Purulent Conjun- tivitis	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 0	0 0	0 0	1 0
Trachoma	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 1	0 1
Erysipelas.....	3 6	1 0	2 1	0 3	2 2	3 1	0 1	2 0	0 2	0 1	1 1	2 0	16 18
Meningitis	7 1	7 0	4 0	3 1	3 0	5 0	11 0	13 1	15 1	4 0	8 0	10 2	90 6
Total of Twenty...	185 459	153 397	161 444	153 520	136 470	119 330	126 361	165 517	165 445	145 587	167 551	169 744	1844 5825

Deaths are in bold face type; reported cases are in ordinary type.

*Reported cases separately compiled.

It will be observed that in a few instances, for example, influenza, meningitis, malaria, pellagra, septicemia, acute dysentery and purulent conjunctivitis the number of deaths is in excess (sometimes very much so) of the number of cases of sickness reported. This merely means that the cases of sickness in the foregoing diseases are not fully reported, if reported at all, and hence credit for these cases has not been made on the infectious disease side of the table. Efforts are now being made to obtain better reports.

CASES OF TYPHOID FEVER ON WATERSHEDS—1912.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Potomac River.....	39	18	18	23	21	7	15	73	112	114	51	39	530
Patapsco River.....	16	10	8	6	..	..	..	29	16	14	3	3	105
Patuxent River.....	4	..	3	..	..	..	..	15	8	4	6	..	40
Susquehanna River.....	..	..	..	0	1	1	1	1	4	4	6	..	18
Herring Run.....	..	3	2	..	..	..	..	12	1	2	..	..	20
Gunpowder River.....	..	..	0	1	1	1	1	9	4	3	2	1	23
<i>Baltimore City Water System—</i>													
Gunpowder River.....	..	..	0	1	1	1	1	9	4	3	2	1	23
Lake Roland.....	..	2	..	..	..	..	..	19	14	14	2	1	52
Total.....	59	33	31	30	23	9	17	158	162	167	80	45	814

OCCUPATIONAL DISEASES—1912.

The Maryland Law requiring the reporting of occupational diseases was passed on April 8th, 1912; the literature appertaining to these reports—the booklet, copy of the law, three certificates, circular letter and a return envelope—was sent to every physician in the State on September 5, 1912. During the remainder of the year, nine cases of sickness resulting from these diseases were reported, one of which (the case of miner's asthma) terminated fatally.

The morbidity cases will next be given, arranged by months, in tabular form.

OCCUPATIONAL DISEASES—MORBIDITY—1912.

Diseases	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Writer's Cramp.....	1	..	..	..	1
Lead Poisoning.....	3	..	1	..	..	4
Copper Refiner.....	1	..	..	1
Acute Arsenical Poisoning.....	1	..	..	1
Acute Bronchitis.....	1	..	1
Miner's Asthma.....	1	1
Total.....	3	1	3	1	1	9

PUBLIC HEALTH PAPERS—1912.

1. On May 3rd, I read a paper entitled "Typhoid Fever and the Way to Prevent It," at a mass meeting held in Frostburg, Allegany County.

2. On June 27th, I read a paper entitled "Rural Sanitation; or, Physical Betterment in Country Life," before the Ladies' Club of Glyndon, Baltimore County, and also before the Men's Club of Reisterstown and Glyndon, in the same county.

3. On October 3rd, I read a paper entitled "Pellagra in Maryland," before the second triennial meeting of the National Association for the Study of Pellagra, held at Columbia, South Carolina.

4. On October 4th, at the same meeting, I also read a paper entitled "Clinical and Pathological Notes on Pellagra".

Respectfully submitted,

C. W. G. ROHRER,
Acting Chief, Bureau of Communicable Diseases.

Report of the Bureau of Sanitary Engineering

June=December, 1912

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Report of the Bureau of Sanitary Engineering

June-December, 1912

ROBERT B. MORSE, Chief

*Dr. John S. Fulton,
Secretary, State Department of Health,
Baltimore, Md.*

Dear Sir: Herewith I beg to submit the report of the Bureau of Sanitary Engineering for the period of seven months, ending December 31, 1912:

GENERAL STATEMENT

Organization. The work of the Bureau of Sanitary Engineering was started on June 1, 1912, upon which date I took charge of the new department. Attention was immediately turned to a search for an assistant engineer of suitable qualifications.

Perhaps even more care than is ordinarily necessary was required in the selection of the engineering force of this bureau, for the work was a new departure in Maryland and previous experience along similar lines was therefore particularly valuable.

On July 1st, Mr. Harry R. Hall, a graduate of the Massachusetts Institute of Technology, who had had over four years' experience with the engineering department of the Massachusetts State Board of Health, entered the service of the Bureau as Assistant Engineer. He was appointed Assistant Chief at the end of the year 1912.

Within four or five months after organization, the work of the office had increased so greatly that a larger force became necessary. In November Mr. Frederick W. Caspari was appointed as an assistant engineer, and in December Mr. John Hall was appointed to a similar position. Mr. Caspari was an assistant engineer with the Baltimore Sewerage Commission, by which board he had been employed for more than six

years. Mr. John Hall, who was unable to report until January 1, 1913, was a graduate of the Massachusetts Institute of Technology, and had been in the service of the engineering departments of both the New Jersey and Massachusetts State Boards of Health.

At the time the Bureau was organized, Miss H. A. Walker, previously employed on the clerical force of another bureau of the State Department of Health, was transferred to the new division.

Much time, especially during the earlier months, was naturally spent in the equipment of the office and the standardization of office methods. However, as a great deal of actual field work and many studies for the improvement of sanitary conditions throughout the State had to be taken up from the first, with a limited force, additional work still remained to be done after the end of the year towards the institution of methods and forms best adapted to the special needs of the office.

Duties of the Bureau of Sanitary Engineering. While the act authorizing the establishment of the Bureau of Sanitary Engineering was passed by the Legislature in 1910, sufficient appropriation for its organization was not made available until 1912. The duties of this Bureau are set forth in Section 21E, Chapter 560, of the Acts of 1910, which reads as follows:

"The Bureau of Sanitary Engineering shall examine into all public and private systems of water supply and prepare proper maps and drawings of the same for permanent record; it shall examine and patrol as far as possible the watersheds or catchment basins of all public water systems, and investigate and report upon all sources of pollution of all public and private water supplies; it shall investigate and report upon all public and private systems of sewage disposal; it shall inquire into and investigate the water supply, sewage disposal, ventilation, heating and lighting of schools, asylums, jails and other public institutions; it shall inquire into and investigate offensive trades and nuisances, disposal of trades wastes, sewage and other offensive matters, and devise means for their control, and perform such other duties and exercise such other functions as the State Board of Health or the Secretary thereof shall designate."

The law, it will be seen, prescribes broad and active duties of investigation and study which may be summarized as follows: the examination of, and the recording of plans relating to, all public and private systems of water supply and sewerage in the State; reporting upon the sanitation of public buildings; investigating offensive trades and nuisances, the disposal of trades wastes and sewage; and devising means for the improvement of unsanitary conditions found.

Progress of the Bureau's Work during 1912. During the first seven months of the existence of this bureau, some progress was made under each of the provisions of the act setting forth its duties.

Many plans of water and sewerage systems in various parts of the State were placed on file. Communities having such systems were requested to submit their maps and plans, together with data pertaining to the works. No great success can be reported from this move. Some municipal authorities responded promptly by sending all plans, a few even going to considerable trouble to have such made up. Many reported that no plans or records were in their possession. In this class a number had lost all such by fire; in some cases maps and information were in the hands of former officials, or of the engineer who had been retained on the work, and could not be obtained; in other cases it was learned that water and sewerage systems had been constructed without plans, although such a state of affairs was mostly confined to those places which had built water mains and sewers in short lengths at a time, or to minor additions to existing systems. Some towns having no plans to offer felt that they could not at present make necessary expenditures to have them prepared. A few paid no attention to the request. As fast as the resources of the Bureau will allow, the municipalities and water companies not complying with the written request, by sending plans and information, are being visited by our engineers, with fairly satisfactory results.

The work of investigating public and private water supplies has been started, and the same may be said of sewage disposal plants. Of the latter there are so far very few in the State, not including institutional and residential plants; but there are many systems of water supply. It is intended to make the examinations of water supplies systematic and sufficiently frequent to keep the public informed at all times as to the condition of the water. Entirely satisfactory execution of this plan will have to await a larger appropriation, as regular supervision over the quality of all water supplies in the State will require a considerable force.

The work on water supply and sewage disposal has already included examinations of these facilities at several public institutions.

Many nuisances and a number of offensive conditions caused by the discharge of sewage and other matters have been investigated and improvements have been planned. Under this requirement of the law would fall the preparation of preliminary plans and reports for water supply and sewerage systems. This

work is carried on wherever requested and where conditions seem most to require it, so as to bring squarely before the municipalities their need for improvements and to induce the authorities to provide for their construction. In order to recommend the most satisfactory and economical systems, considerable investigation is needed, and a study of several different plans is often required. Several preliminary layouts for sewerage systems have been made. Special work along this line has been necessary in the vicinity of both Baltimore and Washington, as will be described later.

I have considered the devising of means for abating unsanitary conditions due to improper sewerage to be not the least important duty of the Bureau. In my opinion, however, the best service can be rendered the State by not merely trying to remedy existing unsanitary conditions, but also by taking care that proposed constructions shall not be of such a character as to give rise to them in the future. It has been my custom, therefore, to offer assistance and advice to municipalities and others in reference to contemplated water supply and sewerage improvements. This work is entirely in line with that performed by the engineering departments of other State Boards of Health. Among the duties of the Massachusetts State Board of Health, for instance, may be mentioned the following:

"To recommend legislation and suitable plans for systems of main sewers.

"To consult with and advise the authorities of cities and towns or with others with reference to water supply and drainage.

"To consult with and advise manufactories with reference to the disposal of manufacturing refuse."

Many towns and individuals have already sought the aid of the Bureau, and it is to be hoped that full advantage of its services will be taken, in order that sanitary conditions may be bettered and that future construction and operation of water and sewerage systems may be along suitable lines.

Plans of Water and Sewerage Systems received. Before the end of the year the following plans were received and placed on file:

Water—

Water supply and distribution systems at Cumberland, Hagerstown, Bay Shore Park, Hyattsville, Berlin, Delmar and Salisbury. Filtration plants at Cumberland, Hagerstown, U. S. Naval Academy and Avalon (Baltimore County Water and Electric Co.).

Sewerage—

Sewerage systems and disposal plants at Easton, Ridgely, National Junior Republic. Sewerage systems at Centreville, Bay Shore Park, Cumberland, Pocomoke, Cambridge, Govans, Princess Anne (proposed). Guilford sub-division (Roland Park Co.). Sewage disposal plants at Mt. Washington, Sabillasville Sanatorium, Melvale Industrial School (Baltimore County), sub-division south of Loudon Park (Baltimore County), residential plant—Robert Garrett, near Roland Park.

Investigations and Reports. Besides many minor matters which were attended to by correspondence and otherwise, field investigations were made as shown in Table No. 1. Some of these examinations cover extended periods, and a few, such as those relating to main drainage work in the vicinity of Baltimore, Washington and Cambridge are being carried on during 1913 as well. Reports on most of the investigations and studies are prepared and sent to all interested parties, for their guidance in making improvements recommended.

TABLE I.—INVESTIGATIONS MADE BY BUREAU OF SANITARY ENGINEERING—JUNE 1 TO DECEMBER 31, 1912.

COUNTY.	TOWN OR LOCALITY.	NATURE OF INVESTIGATION.		
		WATER SUPPLY.	SEWERAGE.	MISCELLANEOUS.
Anne Arundel.....	Annapolis Junction.....	Water supply of National Junior Republic.	Sewerage and sewage disposal of National Junior Republic.	.....
Anne Arundel.....	Brooklyn.....	.....	Study for sewerage system.	.....
Anne Arundel.....	Crownsville.....	Water supply of State Hospital for Negro Insane, Wyman Spring.	.....	.....
Baltimore.....	Baltimore City.....	.....	.....	.....
Baltimore.....	Catonsville.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	.....
Baltimore.....	Drainage areas adjoining Baltimore City.	.....	Study for main drainage.	.....
Baltimore.....	Hillsdale.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	.....
Baltimore.....	Jones Falls Valley.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	.....
Baltimore.....	Lutherville.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	.....
Baltimore.....	Mt. Washington.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	.....
Baltimore.....	Mt. Washington.....	.....	Sewage disposal plant. Complete examination of sewers.	.....
Baltimore.....	Rockdale, Belair Road..	Private wells.....	.....	Sanitary conditions.
Baltimore.....	Towson.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	.....

TABLE I—INVESTIGATIONS MADE BY BUREAU OF SANITARY ENGINEERING—JUNE 1 TO DECEMBER 31, 1912—Cont'd.

NATURE OF INVESTIGATION.

COUNTY.	TOWN OR LOCALITY.	NATURE OF INVESTIGATION.		
		WATER SUPPLY.	SEWERAGE.	MISCELLANEOUS.
Baltimore.....	Towson.....	Private wells.....	.....	Sanitary conditions at dairies.....
Caroline.....	Ridgely.....	Public water supply.....	.....	.....
Caroline.....	Ridgely.....	.....	Sewerage system and disposal plant.....	.....
Carroll.....	Union Bridge.....	Public water supply.....	.....	Dust nuisance at Tide-water Cement Plant.....
Carroll.....	Union Bridge.....	.....	.....	.....
Carroll.....	Westminster.....	Public water supply.....	.....	Pollution of harbor due to sewage and cannery wastes.....
Dorchester.....	Cambridge.....	.....	Studies for main drainage and sewage disposal.....	.....
Frederick.....	Burkittsville.....	Study for public water supply.....	.....	Sanitary conditions.....
Frederick.....	Thurmont.....	Private wells.....	.....	Sanitary conditions in various neighborhoods.....
Frederick.....	Thurmont.....	Public water supply.....	.....	.....
Frederick.....	Thurmont.....	.....	Studies for sewerage system.....	Complete survey of water supply and drainage conditions.....
Frederick.....	Thurmont.....	.....	.....	.....
Frederick.....	Woodsboro.....	Water supply of public school.....	.....	.....
Howard.....	Ellicott City.....	Water supply of Paptasco Manor Sanatorium.....	.....	.....
Kent.....	Worton.....	Private wells.....	.....	Sanitary conditions.....

TABLE 1—INVESTIGATIONS MADE BY BUREAU OF SANITARY ENGINEERING—JUNE 1 TO DECEMBER 31, 1912—Cont'd.

COUNTY.	TOWN OR LOCALITY.	NATURE OF INVESTIGATION.		
		WATER SUPPLY.	SEWERAGE.	MISCELLANEOUS.
Montgomery.....	Drainage areas adjoining District of Columbia.	.....	Study for main drainage.	.....
Montgomery.....	Garrett Park.....	Private wells.....	Pollution and means for abatement	Sanitary conditions.
Montgomery.....	Little Falls Branch.....	.....	.....	.....
Montgomery.....	Takoma.....	.....	.....	Petty nuisances.
Prince George's.....	Brentwood.....	Private wells.....	.....	Sanitary conditions.
Prince George's.....	Drainage areas adjoining District of Columbia.	.....	Study for main drainage.	.....
Prince George's.....	Laurel.....	Private wells.....	.....	.....
Prince George's.....	Mt. Rainier.....	Private wells.....	.....	Sanitary conditions.
Somerset.....	Princess Anne.....	.....	Study for sewerage system. Layout of sewers. Estimate of cost.	Sanitary conditions at dairies.
Talbot.....	Easton.....	Public water supply.....	.....	.....
Talbot.....	Easton.....	Water supply on estate of Kenneth Ferguson.	Sewage disposal plants.	.....
Talbot.....	Miles River Neck.....	Private well.....	.....	.....
Wicomico.....	Nanticoke.....	Public water supply.....	.....	Sanitary conditions.
Wicomico.....	Salisbury.....	.....	.....	.....

WATER SUPPLY INVESTIGATIONS

The following brief summaries describe the more important water supply investigations that have been completed and reported upon by the Bureau during its period of operation in 1912.

ANNE ARUNDEL COUNTY

National Junior Republic, Annapolis Junction. Supply was examined July 29. This educational institution for boys has a population of approximately 100. It is supplied with drinking water from two dug wells, 18 and 19 feet deep. One of these wells in the neighborhood of a stable was found to be badly polluted and its abandonment was advised. The other was found to be in a safe condition when examined, but its proximity to several of the buildings and also to a sewer line requires that frequent analyses of its water be made. The use of a special type of joint for that portion of the sewer in the neighborhood of the well was also recommended.

CARROLL COUNTY

Union Bridge. Population in 1910, 804. Supply was examined December 6. The system is owned by the Union Bridge Water Company. Water is taken from five 6-inch tubular wells driven in limestone to depths ranging from 50 feet to 463 feet, and is pumped to the mains direct, surplus pumpage passing to an open distributing reservoir of 450,000 gallons capacity. The wells are situated in the valley of Pipe Creek close to the town, which has no sewerage system, and their condition has been reported as bad for a number of years. The system is available to most of the thickly populated section of the town and has 178 service connections. The State Board of Health recommended, in 1907, that a separate valve be placed on each well connection, to make possible the collection of separate samples, so that the quality of water yielded by each well might be determined. No results followed, and finally the matter was taken up with the Public Service Commission with a view to compelling the Company to carry out the recommendation. Up to the end of 1912 the valves had not been installed, and therefore it has not been possible to collect proper samples from each well. The present examination has shown, however, sufficient evidences of pollution to condemn the supply, and recommendations have therefore been made that the

Company either seek a new supply or disinfect the water drawn from the present sources. Acting upon these recommendations the Company is now making changes in piping at the wells and will shortly install a plant for the application of hypochlorite of calcium to the water. A new source will probably be provided later on.

Westminster. Population in 1910, 3,295. Supply was examined August 22 and 23. The system is owned by the Consolidated Public Utilities Company. The works were installed in 1883 by the Westminster Water Company, the source at first consisting of a series of springs in the valley of Beaver Run south of the town. In 1895 six tubular wells were driven in the same locality to depths ranging from 50 feet to 150 feet, and in 1912 two more were driven to depths of 200 feet and 345 feet. All are in shale. Water is pumped to the mains direct, the surplus passing to an open puddled-clay reservoir of 750,000 gallons capacity used for low service. In 1901 ten tubular wells were driven at Routzohn Mill southeast of the town, to augment the existing sources, and a separate pumping station was constructed near these wells.

During 1901 the Citizens' Water Company was formed as a competing company, taking water from two sets of springs known as Flohr and Berkholder springs, the former situated east of the town in an uninhabited region and the latter to the northeast near a number of houses. Water from these sources was collected in an open reservoir at Cranberry Station and pumped to a second open reservoir of 750,000 gallons capacity situated east of the town and used for high service. At Cranberry Station eight tubular wells were later driven from 60 to 100 feet deep.

The mains of these two companies parallel each other in the streets of the town. In 1908 the two companies were united under the name of the Consolidated Public Utilities Company. The mains cover most of the congested part of the town and the water is used by practically all the inhabitants. There are between 900 and 1000 services. As a result of an outbreak of typhoid fever in August, an examination was made of the various sources, which showed that the Berkholder springs were badly polluted and unsafe for use; the Cranberry Station reservoir was found to be in a leaky condition allowing polluted water from a nearby raceway to find its way in; at the original springs conditions were such that suspicion must necessarily be cast upon their waters; and at the Routzohn Mill wells the presence of sources of pollution in the vicinity caused them to yield water of a suspicious character.

The Bureau recommended the abandonment of Berkholder springs and the driven wells at Cranberry Station, and the lining of Cranberry Station reservoir, all of which have been done by the Water Company; the better protection of the Flohr springs from possible accidental contamination; the abandonment of the original springs and the removal of the sources of pollution at the Routzohn Mill wells; and in general the affording of better protection to all of the collecting basins. Analyses of the water from all of the sources have shown an intermittent occurrence of intestinal bacteria which is probably due to the causes that are being remedied. Further examinations should show whether or not such is the case. If the colon bacillus persists it will be necessary to install a plant for disinfecting the supply.

FREDERICK COUNTY

Burkittsville. Population in 1910, 228. This is a small but closely built community of about 70 houses, situated at the base of South Mountain, whose inhabitants depend solely upon individual shallow wells for their water supply. An examination of the water from many of the wells which are typical, showed that probably all were grossly polluted and unsafe for use. The abandonment of all private wells and the installation of a public water supply was therefore recommended. Several possible sources of supply were examined. A site sketch for a reservoir and a general outline for the necessary works were presented. Finally, with the co-operation of Dr. Goodman, the County Health Officer, the inhabitants were forced to take steps towards the introduction of a public supply, which resulted in the formation of a private water company. Land has already been acquired and plans are being prepared for the work.

Thurmont. Population in 1910, 903. Supply was examined on November 16. The system is owned by the Mechanics-town Water Company, and was introduced in 1887. Water is taken from High Run, a mountain-stream on the east side of Catoctin Mountain, and is collected in a rectangular concrete basin of 118,000 gallons capacity and carried to the town by gravity. The drainage area of the stream is entirely uninhabited. The water was found to be of excellent quality, but frequent examination should be made of the reservoir and its vicinity, to prevent any accidental pollution of its waters; and any buildings put up on the watershed should be acquired by the Company, to insure safety to the water by the continuance of an entirely uninhabited catchment basin.

PRINCE GEORGE'S COUNTY

Brentwood is an unincorporated and closely built community of about 1500 people. It is in a rapidly growing section just outside the District of Columbia without any general water supply or sewerage system, individual shallow wells being used for obtaining drinking water and earth closets and cesspools for disposing of sewage, other drainage being disposed of in the easiest manner available. An examination of the locality and numerous analyses of well waters have indicated that the wells are probably nearly all so grossly polluted as to be dangerous for use, and the proximity of wells and sources of pollution makes impossible an adequate improvement of conditions. The people using these wells should boil all water used for drinking. The only ultimate solution of the question is the installation of a public system of water supply, for it is unlikely that new wells in the same locality would yield water of different character.

Mt. Rainier, a neighboring incorporated town of 1,242 inhabitants in 1910, is similarly situated as regards its water supply; and the two are so close together that they should join in considering the matter of a public supply. It seems advisable now, as far as the investigation of conditions has been carried in the neighborhood of the District of Columbia, to consider the question of both water supply and sewerage along broad lines, for the many developments that are springing up in this section will be more economically and satisfactorily served by comprehensive rather than small systems.

OTHER PUBLIC WATER SUPPLIES

Before the end of the year, the public supplies of Easton, Ridgely and Salisbury had been examined, but owing to the necessity of continued observations it was not possible to give conclusions and recommendations at that time.

SEWERAGE INVESTIGATIONS

The following are brief descriptions of the more important sewerage investigations that have been undertaken by the Bureau during its period of operation in 1912.

BALTIMORE COUNTY

In Baltimore County, the most densely populated of all the suburban districts of the State, with a population of 122,349 in 1910, there are no incorporated towns, the entire district being under county government. No publicly owned sewerage systems have been established in any portion of the county, and whatever small systems are in existence are owned by private companies or individuals. The result of this lack of sewerage facilities in such thickly settled communities as there are in the county, particularly in that section bordering the boundary line of Baltimore City, is that the sanitary conditions in many districts, notably Arlington, West Arlington and the Park Heights Avenue district northwest of the city, and Govans and Towson to the north, are deplorable, and complaint after complaint has reached this office regarding conditions for which we are unable to suggest adequate relief, except through the construction of sewerage systems of a proper character.

Upon the establishment of the Bureau, one of the first matters taken up was the preliminary study of means for affording relief to these communities, by outlining comprehensive systems of sewers for the different sections. There are three main drainage areas composing that portion of the county contiguous to Baltimore City, all of which drain into the city. To the east is the Herring Run area which borders most of the eastern boundary and a portion of the northern limit. Highlandtown and Canton also lie to the east. The Jones Falls drainage area borders most of the northern portion of the city, and the area draining into Gwynn's Falls lies to the west, this being the largest of the three. Most attention has been given to Jones Falls, as relief has seemed more urgent there than in any of the others, although all are in great need of improvement.

In the Jones Falls area a main trunk sewer is contemplated, starting at Lutherville and extending southward through Sherwood and Ruxton, along the east shore of Lake Roland, through Mount Washington and Melvale, to a point near the city line, where a disposal plant is proposed. A lateral trunk sewer, starting at Towson and following the course of Towson Run, would join the main line at the outlet of that stream into Lake Roland. Beginning in Arlington, a second lateral trunk sewer would cut through the ridge at the Pimlico Road and follow closely a small stream flowing towards the east to Jones Falls, where it would enter the disposal works just above the city line. These main sewers will make possible the relief of the thickly populated districts of Lutherville, Towson, Mt. Washington, Park Heights Avenue and Arlington.

Along the course of the main sewer a preliminary line has been surveyed, and the same has been done on the Arlington branch. A preliminary estimate of cost of main trunk sewers for the entire Jones Falls valley has been made, together with the cost of the necessary disposal works just north of the city line. The main trunk line down the valley will permit the abandonment of the present sewage disposal plant serving Roland Park; and also, the Western Run valley, now partially served by the Mt. Washington system, can be wholly taken care of by this line, making but one disposal plant for the whole Jones Falls drainage area.

A total area of about 20 square miles will be served, the Green Spring Valley being too sparsely inhabited to be considered in any sewerage plan. The future population provided for is about 120,000. The total length of main trunk sewers will be about 11.3 miles, and the cost of the entire project, including a disposal plant of size sufficient for the near future, has been estimated at \$242,000, exclusive of land and rights of way. The method of treatment provided at the disposal works would consist of clarification in deep settling tanks, followed by passage through sprinkling filters and probably final sedimentation. The cost of the disposal plant is estimated at \$60,000.

The main trunk line down the valley from Lutherville to the disposal works will be about 7.2 miles long, and its cost is estimated at \$133,000. The Towson Run sewer will be about 2.3 miles long, and the estimated cost is \$24,000. The line from Arlington and Park Heights Avenue will have a total length of 1.8 miles, and will probably cost about \$25,000.

The Herring Run drainage area includes such thickly settled communities as Govans, Hamilton, Lauraville, Gardenville, Overlea, Belgravia and other smaller districts. To provide sewerage for these places, long trunk lines will be advisable. The main trunk sewer will start at Govans, at the upper end of a branch of the main stream, and continue to the main stream and thence down it to a point below the Philadelphia Road. At its junction with the main stream it will meet a line from Hamilton, and at the Baltimore City line a sewer from Lauraville will enter. Part of Gardenville will be taken care of by the main trunk sewer and part by a sewer running down a small branch to the east of the settlement. Overlea, Belgravia and Bellview will all be taken into a branch sewer following Moore's Run. Overlea lies in the Redhouse Creek valley, but on account of the great distance along the stream to Herring Run, the first studies would seem to indicate that it might be desirable to pump the sewage from this section over into the valley of Moore's Run, rather than to construct a long line through undeveloped country to the main trunk sewer. At first it may be advisable to construct temporary disposal works in the easterly tributary areas rather than build long lines of trunk sewers. This can be determined only after a more detailed study has been made.

Two methods for disposing of the sewage from the Herring Run valley present themselves; one is the construction of disposal works on the banks of the stream south of the Philadelphia Road, and the other is entrance into the existing city disposal plant at Back River.

The sewage of Highlandtown and Canton, densely populated communities in great need of sewerage facilities, can be taken care of either by the city system or by disposal works located at the south end of Canton near the north bank of the Patapsco River, or in part by both methods.

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In the Gwynn's Falls valley the thickly settled districts are quite close together and comparatively short trunk sewers will be necessary. The communities to be taken care of include Pikesville, Sudbrook Park, West Arlington, Howard Park and other smaller suburbs. Pikesville and Sudbrook Park are so far removed from the other districts that it will probably be best to treat them together, and separately from the others, providing them with a separate disposal plant, to be situated on the bank of Gwynn's Falls just below Sudbrook Park. The principal trunk sewer will start at West Arlington and pass down a branch of the main stream, taking in Howard Park

on the way, to Gwynn's Falls; thence following the Falls through Hillsdale to the Baltimore City line, where a disposal plant should be located, unless the sewage be taken care of by the city system.

That part of Catonsville lying within the Gwynn's Falls area, together with Irvington, Violetville, Mt. Winans and Westport, would be served by a main trunk sewer following Maiden Choice Run, a tributary of the Falls, to their point of confluence, and thence along the main stream to a point near Westport, where a disposal plant should be located, unless the sewage be taken care of by the city system. This line is entirely independent of the main Gwynn's Falls trunk sewer. The remainder of Catonsville which lies outside of the drainage area is to be taken care of separately.

Catonsville, an unincorporated community, is one of the better type of suburban localities near Baltimore and has a population of approximately 5,000. It is provided with water by the Baltimore County Water Company, but has no sewerage system. In December, at the request of a number of citizens of Catonsville who were endeavoring to bring about an improvement in its sanitary condition, a special study was made by the Bureau for a system of sewerage for the entire community; and a preliminary plan for sewers and sewage disposal works, showing the type and location of the latter proposed, was drawn up, together with estimates of the cost of building such a system. I appeared before a meeting of the residents and explained in detail the plans and estimates.

The entire cost of the system, as designed, was estimated at \$106,500, of which \$98,000 were for sewers and \$8,500 for disposal works. These figures include engineering and superintendence during construction, but no land costs. The length of sewers called for was nearly 18 miles. The entire sewerage district covered 2,585 acres, a considerable portion of which was not to be sewered at first. Catonsville is situated on a hill sloping away on all sides. Under the existing conditions, the most economical arrangement possible was to provide for the collection of all the sewage by gravity. To do so, the district was divided into four drainage areas. The largest has an area of 1,075 acres and covers all that portion of Catonsville lying between the Old and New Frederick Roads, from a point a short distance east of Nunnery Lane to Beechwood Avenue. The second area in size, 975 acres, covers the territory west of the first as far as Rolling Road, and southerly to a point south of Oak Forest Park. The third area, 325 acres

in extent, lies south of the Frederick Road and mostly between the Rolling Road and Bloomsbury Avenue. The smallest, 210 acres in extent, is east of the third and south of the Frederick Road. The population here is small.

While the streams into which the sewage is to be discharged are small, they have steep slopes, and all except the one in the largest sewer district flow through uninhabited country. A non-putrescible effluent was not deemed necessary at the present time. In the largest district, which drains to Maiden Choice Run, a stream flowing through inhabited country, it is proposed to pass the sewage through a settling tank, and treat the clarified effluent with hypochlorite of calcium to retard putrefaction and reduce objectionable odors. This is regarded as a temporary measure only, as it is contemplated that the main sewer will be extended along the Frederick Road to serve developments nearer Baltimore City, in which event the tank would be abandoned. The sewage from the second area is to be treated in the same manner. The stream into which this sewage would be discharged is a branch of the Patapsco River, from which water is obtained indirectly and used after purification for the supply of the Baltimore County Water Company. The same is to be done in the third area which drains into Bull Branch, another tributary of the Patapsco. In the fourth area the amount of sewage is so small that sedimentation only is deemed necessary for some years to come. It is proposed to place the plant east of Paradise Avenue near a small stream discharging into the Patapsco River south of Halethorpe.

No steps have been taken yet towards constructing these sewers, but it is expected that a private company will be formed to do so. In a neighborhood of the character of Catonsville, the absence of sewers is deplorable and, while private ownership of such works is not generally desirable, if the county authorities will not provide a system, a private enterprise should be encouraged.

Hillsdale (formerly known as Dickeyville) is a small but thickly settled mill village on Gwynn's Falls about one mile west of the Baltimore City line. Need has been felt for relief from improper drainage, and some of the property owners have finally joined together and proposed the construction of a sewerage system. A study of the situation has been made by the Bureau and preliminary plans and estimates have been drawn up for sewers and disposal works to serve a portion of the community. Sewers about 4,000 feet in length are contemplated at present, and a settling tank has been proposed for clarifying

the sewage, the tank effluent to be discharged into Gwynn's Falls. No further treatment seems necessary at present. The total cost of the system is estimated at something less than \$4,000. It is hoped that construction will be started soon. The main trunk sewer contemplated for the Gwynn's Falls valley will pass the proposed settling tank, permitting the discharge of the sewage from Hillsdale into it and therefore the abandonment of the tank.

Lutherville is an unincorporated community, with a population of about 1000 persons, near the head of Roland Run, a branch of Jones Falls. It is served by a public water supply but no sewerage system. In September, a study of drainage conditions was made by the Bureau, and a preliminary plan and estimate made up for a system of sewers to discharge into the proposed Jones Falls trunk sewer. All of the more thickly populated portions of Lutherville are to be served. The system is estimated to cost about \$15,000.

Towson is the county seat of Baltimore County. It is unincorporated and has a population of about 2,500 people. The public water supply of the Baltimore County Water Company is available but there is no sewerage system. Drainage is removed by gutters to ditches and short drains which carry it into neighboring streams. Towson is closely built up and in some sections sanitary conditions are extremely bad. To aid citizens of the town, who were endeavoring to bring about relief from such conditions by the construction of proper sewers, the Bureau made an examination of topographical features and prepared a preliminary layout and estimate of cost for a complete sewerage system.

The plan calls for about 5 miles of sewers, to be constructed in practically all of the streets of the more closely built portion of the community, the sewered area, as at present mapped out, reaching from Aigburth Park on the south to a short distance north of the Joppa Road on the north, and from Highland Avenue on the west to Fairmount Avenue on the east. The total cost of the system is estimated at about \$30,000. The lateral sewers are to discharge into a main trunk line following the bed of Towson Run to a point just east of Charles Street Avenue. Here, on the north side of the stream, is a possible location for a disposal plant. It is to be hoped that the Towson sewerage system will be built in conjunction with the proposed trunk sewers in the Jones Falls valley, in which case the main from Towson, instead of being terminated at a disposal plant

in the location suggested, will be extended down to join the main trunk sewer at Lake Roland. In the event that a comprehensive plan for sewerage of Jones Falls valley is not put through within the next few years, a temporary disposal plant for Towson can be constructed and used until the trunk sewers are built.

DORCHESTER COUNTY

Cambridge, a city of 6,407 inhabitants in 1910, on the Choptank River, is one of the largest communities on the Eastern Shore of Maryland. It is an important oyster market and in addition contains large tomato canning industries. A private water company supplies the city with drinking water and a system of municipally owned sewers serves many of the more densely populated parts, the outlets discharging at numerous points into the harbor, a tidal creek, and into the river.

There are five tomato canneries, two on the harbor-front and three just outside the southerly limit of the city, near a ditch which empties into the harbor. Conditions in the harbor for about two months in summer and early autumn, due to the combined discharge of sewage and cannery wastes, are almost intolerable, the odor arising from the water being naturally most obnoxious along the water-front, but noticeable even in many parts of the city not very near the water. The gases given off from the decomposition of the foul liquid and the sludge banks in the harbor have actually affected the paint on the houses, and the hulls of light-colored boats are turned almost completely black.

The amount of upland water reaching the harbor is very small and there is little tidal circulation, the entering pollution therefore accumulating. Along the ditch into which wastes from three canneries are discharged, foul conditions exist, and at the upper end of the harbor there are extensive banks of filthy ooze which in summer are most offensive. The remaining canneries discharge directly into the harbor.

The Bureau has made an examination of conditions in Cambridge with a view to affording relief from the existing nuisance, the discharge of cannery waste and sewage into the harbor has been investigated, all the canneries and town sewer outlets examined, and samples of the harbor waters taken in winter have been analyzed. Preliminary surveys have been made, to determine the best routes for intercepting sewers along the water-front, and studies are now being carried on to determine how best to collect all the sewage and cannery wastes from the city and convey them to a point on the Choptank River where a disposal plant would be located.

For partial relief during the coming summer, the Bureau recommended the installation of very fine screens at each of the canneries, to prevent any whole or crushed tomatoes, pulp or skins from reaching the harbor, and the construction of a sewer line from the three canneries near the south end of the city to a point of outlet below the extreme upper end of the harbor. This will eliminate the nuisance now existing in the ditch and will lessen that at the upper end of the harbor, and the sewer line can be later incorporated into the main scheme for trunk sewers. The screens at each cannery should be permanently operated, to keep the larger solid matters out of the public sewers.

In conjunction with the above-mentioned improvements, treatment of the harbor water with hypochlorite of calcium was urged. This should be done during canning season, to reduce the odors, until the main drainage system can be built to relieve the harbor from pollution.

The sewerage problem in Cambridge can be solved properly only by the construction of intercepting sewers on both sides of the harbor, to convey the sewage to a suitable point on the shore of the Choptank River, where it should be passed through settling tanks to rid it of the larger suspended solids, disinfected to protect the oyster beds, and finally discharged into deep water. The Bureau is now studying the main drainage question, so that the results may be in the hands of the city authorities before the next session of the Legislature. It is of vital importance to Cambridge that a bond issue be provided at once for carrying out the proposed improvements. Not only are the health and comfort of the residents affected by the present foul condition of the harbor, but the very prosperity of the city is at stake. The impressions formed by visitors who may be in Cambridge during canning season particularly, as well as the possibility of the city becoming a distributing point for oysters contaminated by its own sewage, are matters which should not be disregarded.

MONTGOMERY AND PRINCE GEORGE'S COUNTIES

These counties include that portion of Maryland contiguous to the District of Columbia. The section is being rapidly developed and numerous communities close to the District are fast building up. The question of proper sanitation seems to have received but little attention until lately, and relief from objectionable drainage conditions is urgent. During the past year the Governor of Maryland appointed a special commission of twelve members selected from residents of the two

counties, and including the President and Secretary of the State Board of Health, to study the subject of providing proper sewerage for these sections, to devise means for handling the situation, and to report their findings to the Legislature of 1914. This bureau has been called upon to provide the engineering assistance necessary, and it will undertake a preliminary survey of the various drainage areas which border the District or drain into it, for the purpose of determining the best routes for trunk sewers. The office work has included layouts for trunk sewers in each valley, to take care of the more densely populated places, also studies of population to be served in the various areas, and the outlining of the general scheme for each district. The field work will include a more accurate location of the proposed sewers, so as to make possible an approximation of grades and sizes, and the drawing up of preliminary profiles, to assist in the preparation of such preliminary estimates of the cost of construction as may be necessary to form a basis for the authorization of a suitable bond issue.

The proper disposition of the sewage from the numerous communities is a matter yet to be decided upon. There are two courses open. One is connection to sewers of the District of Columbia system which would have to be extended to the District Line, and the other is the construction of separate disposal plants, just outside the District Line, for each drainage area.

There are three principal drainage areas lying contiguous to the District and needing sewerage facilities at present. On the northeast boundary is the Anacostia River area, which is the largest of the three; at the northerly corner the drainage area of Rock Creek enters the District, and just to the west is the Little Falls Branch area.

In the Anacostia River area, which lies in both counties, one trunk line will begin at or near Branchville and follow the stream down through Lakeland, College Park, Riverdale, Hyattsville and Bladensburg, to the District Line, where either connection will be made with a District sewer or a disposal plant constructed. A branch is to commence near Sligo, take in the laterals from Silver Spring, North Takoma and Takoma, and pass thence southerly along Northwest Branch through Mt. Rainier, Brentwood and Hyattsville, to a junction with the main sewer.

In the Rock Creek area, which is entirely in Montgomery County, the main trunk sewer will probably have its origin at Garrett Park and follow the stream down to the District Line, collecting on the way laterals from the west from a portion of Bethesda and other developments in its vicinity, and the

northern portion of Chevy Chase; and from the east, laterals from Kensington, Forest Glen and Linden. The main sewer will be either connected to a District sewer or to a disposal plant near the District Line.

Little Falls Branch, which is also entirely in Montgomery County, drains part of Bethesda and Bradley Hills, Edgewood, the southwestern portion of Chevy Chase, Somerset, Friendship Heights and other smaller localities. A trunk line is to start at Chevy Chase and another south of Friendship Heights. These are to join together and follow the main stream down to a point near the Dalecarlia receiving reservoir of the District water system; there it will be either connected to a District sewer or to a disposal plant to be located in the vicinity. A branch will commence near Bethesda and another in Edgewood, the two uniting near Willets Brook and following it to its junction with Little Falls Branch, where a connection will be made to the main sewer.

Little Falls Branch receives a considerable amount of sewage from Somerset, Friendship Heights, The Hills, Drummond and Chevy Chase. These districts lie upon either the main stream or its branches and make use of the nearby watercourses for the disposal of sewage, in most cases without preliminary treatment, although Chevy Chase is provided with a sewage irrigation field which receives very irregular attention. This has resulted in a most objectionable condition in the stream, and at times it is nothing more than an open sewer. The attention of the State Board of Health has been directed to this nuisance and the matter was reported upon during the present year. The best plan for permanent relief is the construction of a main trunk sewer in the Little Falls valley. If steps are not taken so this can be brought about in 1914, conditions are such that the State Board of Health will be compelled to take summary action.

SOMERSET COUNTY

Princess Anne, the county seat of Somerset County, had a population of 1,006 in 1910. It is supplied with water from a municipally-owned system, and there are three lines of sewers in its main street. These sewers discharge into Manokin River, a tidal stream flowing through the north end of the town and passing it to the west. The outlets are located under the Main Street bridge, and while a local nuisance is caused by the discharge of sewage, no appreciable effect is apparent in the stream for any considerable distance. At times of high tide there is a depth of several feet of water in the stream at the

sewer outlets, but at low tide the water is only a few inches deep. There is but little upland water finding its way to the stream in dry weather, and the tidal flow is therefore depended upon almost entirely for the removal of sewage from the vicinity of the outlets.

In September, the attention of the Bureau having been directed to the fact that plans had been drawn up and work was shortly to be commenced on a complete sewerage system with the point of discharge above the town, an examination was made of the plans prepared by the town's engineer, and the locality was thoroughly inspected. It appeared from the results of the examination that to discharge raw sewage at the place suggested, which was a deep point in the creek several hundred feet below the present outlets, and one at which the flow was extremely sluggish and retarded considerably by growths of grass along the banks, would undoubtedly create a nuisance unless some treatment were given to the sewage before its discharge. The town authorities were advised that no plans would be approved which called for the discharge of sewage at this point, unless it were given a preliminary sedimentation treatment, and it was suggested that the plans be redrawn to provide an outlet southwest of the town where there was sufficient diluting water to make treatment unnecessary at the present time. In order to demonstrate that such a plan would be practical at little increased cost, this office drew up preliminary plans for a system by which a large portion of the sewage would be discharged below the town, while the remainder would be emptied into the creek at the north end, tank treatment to be applied in the future when necessary.

Much difficulty was experienced in bringing the authorities to realize the advantages of the revised plan, but finally the drawings were so changed as to provide for the main sewer outlet at a point close to the one selected by this office.

The Bureau has watched as closely as has been possible the construction of the system, and has been able to stop the continuance of several grossly improper methods of doing the work, due principally to insufficient engineering supervision, and attempts to economize on cost, which have resulted at points in construction of an inferior character.

MT. WASHINGTON SEWERAGE CASE

In the early summer of 1912, a disposal plant of a patented type, together with tributary sewers, was completed by the Baltimore Suburban Sewerage Company near Mt. Washington,

a settlement in Baltimore County, about one and one-half miles north of Baltimore City and in the valley of Jones Falls. The sewers serve a portion of Mt. Washington, and the main line follows the course of Western Run, a tributary of Jones Falls, through a section largely uninhabited except in the vicinities of Mt. Washington and a few local land developments. The greater part of the main trunk line in the Western Run valley follows closely a boulevard constructed by the Company for the purpose of opening up and developing property contiguous to it. The area now partially served by the sewers of the Company is about 4,000 acres in extent.

A severe epidemic of typhoid fever occurred in Towson in September which brought forcibly to the attention of the county authorities the consideration of the question of sewerage, and a meeting was held between them and certain officials from the State Board of Health, to discuss ways and means for providing sewers. At that time the question of making use of the Mt. Washington disposal plant was referred to. The advisability of such action was afterwards investigated by the Bureau. A report was submitted by me to the State Board of Health stating the following objections:

"In my opinion, the formulation of any agreement between the County Commissioners and the Baltimore Suburban Sewerage Company, having for its object the treatment of the Jones Falls valley sewage at the existing Mt. Washington plant, would be most unwise, for the following reasons:

"1. The binding of the County to any predetermined plan whatsoever, in the matter of sewage disposal, should not be considered until a thorough engineering study of the problem has been completed.

"2. Any plant that may be necessary for the treatment of sewage in Baltimore County should be publicly owned, if possible.

"3. If entrance into the Jones Falls trunk sewer of the city system is denied the County, the proper location for the disposal works consequently necessary would be in the valley of Jones Falls directly north of the Baltimore City line, and not near Mt. Washington.

"4. The Mt. Washington plant has certain features hitherto untried for sewage treatment, on other than an experimental basis, and has not yet had an opportunity to demonstrate its efficiency, owing to the small number of houses so far tributary to it.

"5. The Mt. Washington plant is a clarification plant only, and cannot, as such, furnish an effluent which will be of proper quality for discharge, in large quantities, into Jones Falls.

"6. The Mt. Washington plant is unnecessarily expensive in construction, and will probably be so in operation, in comparison with the work it can accomplish. The extra burden must necessarily fall upon those contributing sewage to it.

"7. The Mt. Washington plant has certain features so similar to those of the Imhoff tank, previously patented in the United States, that it would hardly be advisable to use it until prior investigation shall have shown that patent litigation was not to be feared."

Just as this report was completed, it became publicly known through the press that correspondence had passed between the County Commissioners and the Baltimore Suburban Sewerage Company relative to the possible purchase of the Mt. Washington disposal plant and sewerage system for the sum of \$600,000. A protest was immediately sent by me to the Secretary of the State Board of Health against such a transaction, stating that main trunk sewers and a disposal plant for the whole Jones Falls drainage area could be built for about \$250,000, and that I considered the proposed expenditure of \$600,000 would be practically wasted in providing sewerage facilities for the whole area. This report and letter of protest were forwarded to the President of the Board of County Commissioners on the day before the meeting was to be held to consider the purchase of the plant, so that the attitude of the Bureau would be known. As no regular meeting of the State Board of Health had been held since the report was completed, no formal action had been taken upon it. Although at present the law does not require the submission of plans for sewerage construction to the State Board of Health for approval, in the State as a whole, there was a law passed in 1912 which provides that in Baltimore County no sewerage system shall be established by the County Commissioners except in accordance with plans approved by the State Board of Health.

In spite of the Bureau's report, the County Commissioners employed a former chief engineer of the State Roads Commission to advise them concerning the purchase of the sewerage system and disposal plant. That the protest of the State was not presented or even mentioned at the meeting of the Board of County Commissioners, was shown by the fact that one of the members offered a resolution referring the matter to the State Board of Health, which, however, was not passed.

The engineer employed by the Commissioners submitted his report about a week after his employment, recommending that the plant and sewers be purchased at the price of \$600,000. He placed the physical value of the property at \$300,000, the remaining value being made up of future entrance charges, patent rights, stream control, etc. The purchase was made on the day of the receipt of the engineer's report, October 23rd, in apparent disregard of the law, and without even giving the people of the county an opportunity to be heard on the question.

All of this was done without any public reference whatsoever to the State Board of Health.

At a special meeting, on October 26th, the State Board of Health adopted the following resolution approving the report of the Bureau:

"The State Board of Health protests against the action which has been taken by the Commissioners of Baltimore County, looking toward the establishment of a sewerage system for a large section of the county without the approval of the State Board of Health, as required by the law, and it approves the report of the Sanitary Engineer of the State Board of Health, indicating that the system contemplated by the purchase of the plant of the Baltimore Suburban Sewerage Company is not adapted to secure the most economical and efficient results in the disposal of the sewage and the protection of the health of the people."

The haste and secrecy with which the deal was put through, together with the seemingly exorbitant price and failure to receive the approval of the State Board of Health, so aroused public sentiment against it in the county that a number of citizens jointly instituted proceedings in the Circuit Court of Baltimore County, against the Commissioners and the Baltimore Suburban Sewerage Company, to have the sale set aside, alleging fraud, unfair price, and lack of approval by the State Board of Health. The State Board of Health also asked to have the sale set aside, for the last-named reason. The date of the trial of the taxpayers' case was set for December 30th, the State Board of Health's case being held in abeyance pending a decision on the former.

It became evident that I would be called as a witness in the case, and it was therefore essential that a detailed investigation of the Mt. Washington system be made. The sewers were thoroughly examined so far as they could be located (no plans could be procured and, as testified to later, no detailed ones were in existence), the character of construction investigated, and estimates were prepared, in an effort to compare the cost of this system with that of an equally extensive, but properly designed and constructed, system.

The sewers were found to be poorly designed and built. In many places they were of insufficient depth, very little attention had been paid to line and grade, and the manholes, unique in character, were improperly spaced and far too few in number. But one point was found on the entire line where it was possible to see from one manhole to the next. It was estimated that to construct a proper system of sewers in the same locality would cost about \$60,000, while a system such as has been built should not cost more than \$48,000.

The disposal plant consists essentially of a special patented type of two-story settling tank, possessing certain defects in design which will render it of little use when the sewage flow is of normal volume; "scrubbers", which are small and shallow beds of sand intended for operation at high rates, for the purpose of removing the fine non-settling suspended solids; and a final tank for treating the effluent with chemicals. The entire plant has never been thoroughly tried out, as but comparatively few houses have been connected with the sewers. No nuisance has been caused by the discharge of the effluent into Jones Falls, but it is believed that, when the amount of sewage reaches that for which the tank was designed, very objectionable conditions will be created. It was estimated that the cost of this disposal plant was approximately \$34,000.

My estimate of the total cost of constructing the sewerage system and disposal plant was, therefore, \$82,000, including engineering expenses, but not land nor rights of way. As above-mentioned, the price charged by the Sewerage Company for these structures, together with several acres of land at the plant, and rights of way, entrance contracts, etc., was \$600,000. Engineers who had been in charge of the construction of the sewers and disposal plant testified as to the cost of the two, their figures amounting to less than \$85,000 for the total construction cost.

At the end of 1912 the trial had hardly gotten under way, but the result of the case will be given here. The entire proceedings consumed 45 court days and much evidence of a technical character was introduced by both sides. In addition to the members of the Bureau's force engaged in the examination of the system, and myself, there appeared for the taxpayers, Mr. John H. Gregory, Consulting Engineer of New York, Mr. Ezra B. Whitman, Water Engineer of Baltimore City, and Mr. Henry G. Shirley, Chief Engineer of the State Roads Commission, all of whom testified to the inferior character of the construction, defects in the design of the sewers and disposal plant, and to the exorbitant price paid. In behalf of the County Commissioners and the Sewerage Company, there appeared Mr. George W. Fuller, Consulting Engineer of New York, and Prof. W. T. Mason, of the Rensselaer Polytechnic Institute of Troy, N. Y.

The decision rendered by Judge Frank I. Duncan was to the effect that the County Commissioners had no power to purchase the system without the approval of the State Board of Health, as required by the law of 1912; and that the sale was therefore void. The decision did not deal in detail with

the other points at issue. The defendants were given 60 days within which to file an appeal with the Court of Appeals.

This decision is a notable victory for the advancement of sanitation in Maryland, as it upholds the Baltimore County law requiring the presentation of plans for sewerage improvements to, and their approval by, the State Board of Health, a body which has the guardianship of the health of the State as a whole, and should be best able to judge how these developments ought to be carried out, to the end that the interests and health of the people may be protected, and that they may obtain the best with the expenditure of the least amount of money consistent with efficiency.

MISCELLANEOUS UNDERTAKINGS

The following summaries are the results of other examinations of importance, not included under the general subjects of water supply and sewerage, that were undertaken by the Bureau during its period of operation in 1912.

CARROLL COUNTY

Dust Nuisance at Tidewater Portland Cement Plant, Union Bridge. The cement plant is located less than half a mile to the south of the town. Hydrated lime and Portland cement are the products, the raw materials, limestone and shale, being obtained from nearby quarries.

Much complaint has been made by residents concerning the quantity of cement dust issuing from the tall stacks of the plant into the atmosphere and finally settling upon the town. The State Board of Health held several hearings, at which both residents of the town and representatives of the Company appeared. It is claimed that the dust causes much damage, both to the health of the people and to property. In that portion of the town near the plant, the houses and fields are covered with a coating of cement dust, giving everything a white appearance.

The Bureau noted conditions in Union Bridge, made an examination of the plant and its various processes, and also of a plan prepared by an engineer employed by the Company, having for its object the elimination of the dust nuisance.

The process of manufacturing hydrated lime does not appear to create any nuisance, except for large quantities of black smoke which issue from the stacks at times. In the manufacture of Portland cement, dust rises into the air through tall stacks leading from the driers and kilns. The driers are heated by waste heat from the kilns, and as forced draft is supplied to the kilns to generate intense heat, dust and gases are carried upward with considerable velocity and rise high in the air. The entire plant is a dusty place, but it is probable that the dust from the other processes has only local effect.

The plans for eliminating the dust nuisance provide for abandoning the stacks and passing the dust and gases, first through dry settling chambers, and then through cylinders into which water will be sprayed to deposit the fine particles and allow them to be easily collected. The outlets of the cylinders will be fitted with fans exhausting into the atmosphere, to maintain the draft which the stacks now provide.

FREDERICK COUNTY

Complete Survey of Water Supply and Drainage Conditions in Thurmont. Thurmont had a population of 903 in 1910. It is situated on Hunting Creek near the foot of the Catoclin Mountain. It is served by a public water supply, but a large number of the inhabitants use water from private wells. Although it is thickly settled, no system of sewers is in existence and drainage conditions are bad. Sewage is taken care of by earth closets and cesspools, and a common practice is to lead overflows from cesspools to nearby streams or ditches. Nuisances have been caused by overflowing cesspools and by stagnant pools of house drainage in street gutters. On account of the density of population, most of the wells that are still in use have been found to be badly polluted.

The Bureau has made a complete examination of the town; all houses in the thickly built-up section have been visited, conditions of drainage noted, privies and other means of sewage disposal examined, and samples collected from many individual wells still in use for supplying drinking water. All of the wells, privies, cesspools, drainage ditches, etc., have been plotted on maps of the town, which show at a glance the congestion and advisability of adopting means for relieving conditions.

It cannot be expected that private wells in the thickly settled section will yield a safe water, and all people using such should abandon them and use the public supply, which is of excellent

quality. The present methods of sewage disposal are dangerous to public health, many of the streams and ditches are nothing more than open sewers, and the only relief to be obtained is by the construction of a sewerage system.

HEALTH CONFERENCE OF MEDICAL AND CHIRURGICAL FACULTY
OF MARYLAND ON THE EASTERN SHORE

In November, the Bureau was requested to send a representative to a series of health conferences held under the auspices of the Medical and Chirurgical Faculty of Maryland in the larger towns on the Eastern Shore, to speak on sanitation and the relation between the Bureau and the various public health problems of the State. During November and December, a large amount of time was spent in appearing at these conferences. The first talk was given at Federalsburg, on November 20th, by Mr. Harry R. Hall. I appeared at Salisbury on November 22nd, and Mr. Hall was present later at Snow Hill, Pocomoke City, Crisfield and Easton.

The subjects covered related principally to water supply and sewerage, the benefit from a health standpoint to be derived from proper systems of each, and the need for State control over their installation. Numerous examples of typhoid fever epidemics caused by polluted water supplies were cited, and cases where the death rates from typhoid fever, and other causes as well, were reduced by the purification of polluted water supplies.

EXHIBIT AT THE INTERNATIONAL CONGRESS ON HYGIENE AND
DEMOGRAPHY, WASHINGTON, D. C.

Much of the Bureau's time during the months of August and September was spent in the preparation of a suitable exhibit for this Congress. Before the organization of the Bureau in June, practically no material had been collected, and considerable time and effort was therefore required to gather enough material for a creditable display. A special effort was made to gather plans and photographs of water supply and sewerage systems in Maryland, in order that the various types existing in the State might be presented.

PRESENT CONDITIONS IN MARYLAND AND NECESSARY REMEDIAL MEASURES.

Lack of Engineering Services, Plans and Records. The search of this office for maps, plans and records of, and information concerning, the various water supply and sewerage systems of Maryland has shown that many such systems have been built without the engagement of proper engineering services; that in many cases both design and construction are defective; that a large proportion of systems have been built with very meagre and utterly insufficient plans; that some have been constructed without any plans, this particularly being the case where the systems have been built in small sections; that in very few cases are plans changed or added to so as to become proper and complete records of the actual work built; and that in a number of places such plans and records as were made have been carelessly kept and have become lost or burned. In a number of places about the only information that can be obtained is by word or mouth, from the superintendent or some other town officer.

The effort of many municipalities to keep down expenses on public works by getting along without the services of an engineer, or by engaging an engineer of inferior qualifications, is a short-sighted policy. The usual result of such a practice is the establishment of improperly protected or uneconomically operated water supplies and poorly designed sewerage systems which do not admit of ready extension, are uneconomical in construction, unsatisfactory in maintenance and operation, and which create offensive conditions in the bodies of water into which they discharge. An experienced and capable engineer can not only institute sanitary, suitable and satisfactory water supply and sewerage systems, but can usually save a community, by economical designs, much more than the cost of his services. He will leave, also, in the town's possession full plans of the work and complete records for future reference. The value to the community of such information cannot be over-estimated, particularly when connections, additions or alterations are to be made, or when street work of another character is to be undertaken.

State Supervision. The only sure remedy for the general faults named above is strict supervision by the State Board of Health over all water supply and sewerage design and construction, as well as over the operation of such systems after they are built. If municipalities are given free rein, sources of water supply are often chosen without due regard to both physical and sanitary quality of the water yielded, or without consideration of possible necessary treatment; and sewage is often disposed of in what may seem to be the manner which will be the least expensive, without regard to the nuisance that may occur or to the effect that may be produced on neighboring settlements.

As population increases, the need becomes much more acute for protecting the rights of a community against transgression through the faults of others, as well as protecting its own health and interests from possible short-sighted policy. Many of the most progressive states have long since recognized the great advantage of centralized authority over the design, construction and operation of all water supply and sewerage systems. In these cases, generally, it is required that all sources of water supply and all points of sewage discharge meet with the approval of the State Board of Health; that complete construction plans for all new work be submitted to and approved by that body; that construction take place in accordance with the approved plans, or that all necessary changes be submitted for approval; and that the maintenance and operation of all systems be under the jurisdiction of the State Board of Health. In general, too, the states have the power to order changes in the methods of supplying water and disposing of sewage and other waste matters, wherever the central authority may deem that the public health is not sufficiently safeguarded or offense is created.

In Maryland, it is high time that the State Board of Health be given, by definite legislation, the above-mentioned supervisory powers and duties. It cannot be expected that poor design or construction can produce a suitable water supply or sewerage system, or one that can give anything but trouble in its operation; nor can a system of proper design and construction produce satisfactory results except under intelligent supervision. The best results can only be obtained where proper power is given, and this is not yet the condition of affairs in Maryland.

A glance at the act under which the Bureau of Sanitary Engineering was established will make it plain that its duties are mostly those of investigation. It may examine water sup-

plies and sewerage systems and make recommendations for needed changes. While, even during the first few months of its existence, the Bureau has been able to accomplish results, on account of the willingness of some local authorities to institute changes along the lines recommended, the powers of the State Board of Health in regard to water supply and sewerage systems are not definitely prescribed; and cases are bound to arise in which the most flagrant abuses will continue to exist in spite of the Bureau's exhaustive study and definite recommendations, unless full power be given to the Board.

At present, except in Baltimore County, there is no law requiring that plans for sewerage construction be submitted to the State Board of Health for approval; and in all parts of the State water supplies can be constructed without the slightest interference from that body. The people have no protection whatever, unless later the water can be proven bad, in which case improvements may be required under general powers which the Board possesses. Even in Baltimore County only such sewerage work as the County Commissioners undertake is required to be approved by the State Board of Health. So far, with the exception of the attempted purchase of the Mt. Washington sewerage system, no steps whatsoever have been taken by these officers towards the installation of sewers. Practically all of the sewerage construction in the populous suburban districts around Baltimore, and around Washington as well, has been undertaken by the developers of real estate, and each of these at best gives thought only to his own sewerage problem. In most cases the effect in the past has been to get the sewage off the development as quickly and as cheaply as possible, regardless of the effect on neighboring sections. As no supervisory authority worth mentioning has been exercised, few of the systems have been built according to good practice, and many foul conditions have arisen. Usually the system built by one company does not fit in with that established on the neighboring development. As a result of this state of affairs, much local contention has arisen and complaints are heard on every hand. When public systems are finally built, there will be such a conglomeration of small isolated systems as to make the problem of fitting them into a comprehensive scheme most difficult.

Main Drainage Board for Baltimore County. The population of Baltimore County increased from 90,755 in 1900 to 122,349 in 1910, or at a rate of 34.8 per cent. A very large proportion of the total population is within what may be termed the Metropolitan District of Baltimore. Practically all of the

territory in the county outside of this section decreased in population between 1900 and 1910, and therefore the increase near the city was at a much higher rate than 34.8 per cent. In view of the intolerable drainage conditions existing in this thickly settled and rapidly growing district, it is evident that the sewerage problem must be given attention in the immediate future, and that it must be treated as a whole, in a broad and comprehensive manner.

Undoubtedly the best method of attacking this problem is by the passage, without delay, of a sufficient bond issue to sewer properly all the built-up areas, and to provide for the preparation of plans and the construction of the work under a non-partisan commission which will appoint a properly qualified and compensated chief engineer and engineering force. All such plans and construction should be subject to the approval of the State Board of Health, as in all other parts of the State.

Baltimore County is in a peculiarly fortunate situation for the formation of such a commission, as it is all under a central government, and there would not be the difficulty of getting various towns together, such as is generally met with in such movements.

Main Drainage Board for Areas near Washington. The problem of main drainage in the sections of Maryland just outside of the District of Columbia is similar to that in the suburban districts around Baltimore. These portions of Montgomery and Prince George's Counties, while not in general as densely populated as similarly situated sections around Baltimore, should have their sewerage problems treated in much the same manner. As has been mentioned previously in this report, a start in the proper direction has been made already by the appointment of a commission to make a preliminary report. It is to be hoped that this board will be continued and that a bond issue of sufficient size may be passed, so that an engineering force may be appointed to proceed with detail plans and construction.

Water Supply for Areas near Washington. While in the suburban areas around Baltimore large sections are supplied with water by one private company, and much of the remaining territory is more or less adequately served, no such condition exists in the populous sections of Montgomery and Prince George's Counties in the vicinity of the District of Columbia. Much of this area is supplied from private wells, and the rest is served by a large number of small public sys-

tems. Many of these sources yield insufficient water to provide for a large increase in population, and the water from some will doubtless become unsafe for use with such a growth. The time will soon come when the problem of water supply, like that of sewage disposal, will have to be considered along broad lines, and a common source sought.

The most suitable source for obtaining a sufficient supply for this whole section, without going into the matter exhaustively, would seem to be the Patuxent River. In this connection it should be stated that the Patuxent River has been reported upon as a source of increased water supply for the District of Columbia, and has been found to possess many points of advantage over the suggested enlargement of the supply from the Potomac River. To use the Patuxent River, the United States Government will have to obtain the permission of the State of Maryland. If this is granted, it should be done only after a thorough study shall have shown that a sufficient and satisfactory supply for the future use of the Maryland suburban areas can be better provided from another source. If the Patuxent supply is found to be desirable both for Maryland and the District of Columbia, its development might possibly be undertaken jointly, in such a way that the interests of Maryland would be fully protected.

The question of water supply in the sections of Maryland adjoining the District of Columbia is a pressing matter for inquiry, and it might be taken up advantageously by the same board which will have the sewerage study under its supervision.

Examination of Private Wells and the Need of Better Water Supplies. The act establishing the Bureau requires that it "shall examine into all public and private systems of water supply." The subject of examination of public water supplies has been already discussed, and the results of the investigations made during 1912 have been briefly described. Except in a few instances, no attempt has been made to pursue extended studies on private supplies. The Bureau of Chemistry, which had been reporting upon both public and private supplies up to the time of the formation of the Bureau of Sanitary Engineering, still has in its charge correspondence relative to private supplies. It is of course proper and in accordance with the intent of the law that the supervision over all water supplies should be a duty of this office. As matters now stand, there is a chance for misunderstandings at times, and it is to be hoped that sufficient assistants can be allowed the Bureau before long, so that systematic examinations of private

as well as public water supplies can be made. One has but to consider the number of houses in rural districts, where no public supplies are available, to realize at once the magnitude of such an undertaking.

The general custom at present in the examination of such supplies is for the person desiring the examination to send in a sample of water in a container of one kind or another, the Bureaus of Chemistry and Bacteriology making the necessary analyses, and the former sending out a report upon the condition of the water. Except in rare cases no personal examinations are made of the source of supply. Under this method, dependence must be placed upon information, given more or less completely by the sender of the sample, as to the surroundings of the source of supply, a knowledge of which is essential for the proper interpretation of water analyses, and upon which advice must be based. Unless an examination of surroundings is made, the proper advice usually cannot be given as to the best method to pursue in remedying conditions (where betterment is possible) in the neighborhood of a particular well, and at best the suggestion can only be general. Samples have been sent in repeatedly from wells that have been pronounced bad at some previous time, in the hope that changes which have been made about them will have improved the water. An examination by a person with the proper training would generally determine whether a well could be improved and whether the collection of further samples would be of any value, thus eliminating trouble on the part of the owner, as well as unnecessary analytical work on the part of both the Bureaus of Chemistry and Bacteriology. At present they are obliged to undergo this extra burden, by the re-examination of many samples of water that are, and always will be, hopelessly bad. By eliminating such useless examinations, a much greater amount of necessary and more valuable analytical work can be done.

With the institution of personal examination of private supplies, the public will receive the direct benefit of suggestions made from a first-hand knowledge of conditions, and assistance can be rendered in procuring new supplies where old ones have been condemned. In order to make effective the proper kind of examination of private supplies, a force larger than is now available to the Bureau would be required, but the results to be obtained would justify the increased expenditure. After the State has been gone over in this way the knowledge of the condition of its water supplies, both public and private, will be most complete, and a great step will have been taken towards

reducing the high death rate from typhoid fever which now exists. It is intended, even under present conditions, as soon as other work will permit, to take over the matter of private water supplies, and have all correspondence relating to such pass through this office; and in the most urgent cases to have personal examinations made in the field.

In connection with the examination of private wells, it has been found that there are a surprisingly large number of small but thickly settled communities in the State, both incorporated and unincorporated, where no public systems of water supply are in existence, and where the inhabitants use water from shallow wells which are polluted beyond any hope of recovery. The State Board of Health has repeatedly made examinations of wells in many such places and almost without exception condemned them as unfit; and in spite of the knowledge of conditions, many people are willing to continue using them. In a thickly settled community it is impossible to maintain well waters in a safe condition, no matter what safeguards are attempted in the matter of caring for sewage and drainage, as so many different polluting influences exist that many are entirely lost sight of. A common fallacy existing in the minds of many is the belief that a person who, in a congested community in which there is no public water supply or sewerage system, maintains a cesspool on his property is a menace to his neighbors and an enemy to the community. This would be true if it happened in an isolated locality where such a cesspool might certainly be the only possible dangerous source of pollution, but in a congested district where so many different pollutions exist and where every one is doing his share, it is a most wasteful policy to spend money in an attempt to maintain individual wells in a safe condition. Such money could be much better spent in putting in permanent improvements such as proper water supply and sewerage systems.

Many complaints have reached this office regarding instances, in places having a public water supply, in which a person has converted his former well into a cesspool, to take care of the added amount of house drainage and sewage due to the introduction of the public supply. A neighbor who may have not decided to take the public supply immediately complains that his well is being polluted by the other's cesspool. Undoubtedly it is, but long before that cesspool was built his well was probably in a condition but little if any better than afterwards. He himself probably has an earth closet which may be as much of a menace as the cesspool.

There is only one remedy to be applied in thickly settled communities, however small, and that is for everybody to take water from the public supply where one exists, and where there is none, to have one installed as quickly as possible. The importance of State control over all water supplies is here apparent, for the exchange of a grossly polluted supply for one not much better would be of little benefit.

In the second city of this State, where a public water supply exists, although a most objectionable one to be sure, but one which will shortly be abandoned for an excellent filtered supply, a very large proportion of the inhabitants has still clung to the use of private wells, presumably mostly on account of the bad public supply. The density of population is great, and the typhoid fever death rate has been enormous. The public supply cannot be blamed entirely for this excessive rate. When the new public supply becomes available, summary action should be taken to close all wells.

Legislation permitting the State Board of Health to force the inhabitants of any community to abandon polluted wells and install a system of public water supply would aid a much needed improvement in the State, and help to put Maryland on a par, as far as sanitation is concerned, with other progressive states.

The Promiscuous Collection of Water Samples. In the past the appropriation granted to the State Board of Health has never been sufficient to employ a force large enough to send out to take samples of either public or private water supplies in a systematic manner, and about the only way in which to make possible their examination was by allowing samples to be collected and sent in by local health officials and private individuals. Directions and explanations were prepared and sent out to persons collecting samples, informing them of certain requirements as to the kind of containers to be used and the method to pursue. In this way many more analyses have been made of waters from different places than otherwise could have been possible. There is, however, an element of uncertainty in this method, as there are so many factors liable to affect a sample of water in its collection that an entirely wrong interpretation may be made from the analysis. For example, in the collection of samples for bacteriological analysis extreme care must be exercised in preventing even the slightest contact of interior parts of the bottle or stopper with any foreign matter, in order that the water in question may not be affected; for the introduction of even the slightest amount of such mat-

ter, perhaps no more than by contact of a finger with the inside of the stopper or allowing the water to flow over the hand while running into the bottle, might give a high bacterial count in a water which is really in good condition. In the case of chemical samples, it may happen that bottles are not carefully and thoroughly cleaned. The persons taking samples may believe that they have exercised the proper amount of care, but in the laboratory it cannot be told whether that is true or not, and in the interpretation of the analyses dependence must be placed on the supposition that they have, and that the results represent the true condition of the water. Of course, a result would not be apt to show up better than the water actually is, but would, in case of insufficient care in sampling, disclose the opposite.

Aside from the lack of a sanitary survey to aid in judging the quality of a water, it will be seen that there is always an uncertainty existing in permitting samples collected promiscuously by unskilled persons to be analyzed, and their results sent out as truly representative. In order to make analyses actually unquestionable, the proper course to adopt is the collection of all samples by representatives of this department, so that when a sample is analyzed there will be exact knowledge as to how it was taken. Also, samples should be taken only in receptacles sent out by this department. This is a state of affairs which probably can be reached only gradually, as the force of the Bureau is increased, but it is hoped that eventually all samples of water or sewage will be collected either by its own force or, in special cases, by persons who have been properly instructed in the manner of collection.

Control over Supplies of Private Water Companies.

The State Board of Health, through its Bureau of Sanitary Engineering, is required to investigate all water supplies in the State; but the Public Service Commission is also given certain supervisory powers over private water companies. That commission has undertaken in the past the examination of water supplied by these companies, with the purpose in view of requiring changes in such supplies as it might deem polluted. Investigations and recommendations of the Public Service Commission, in any way affecting the question of the quality of water supplied, duplicate the work required of the State Board of Health, and are therefore unnecessary and place an extra burden of expense upon the State. It is obvious, too, that such supervision on the part of the commission may lead to serious difficulty; for, should its findings and recommendations differ

from those of this bureau, there would be a conflict of orders to the company in question, and the State would be in an embarrassing position. The State Board of Health is regarded as the supreme health authority in Maryland, and the Bureau of Sanitary Engineering was established with the specific purpose in view of improving the water supply and sewerage services throughout the State. There is no reason why the water supplies owned by private companies should be divorced from the others, nor why there should be either duplication or division of authority over them, in so far, at least, as the sanitary and physical quality of the water, or extension of service, relating as it does to the health of the people, is concerned. If the control over water supplies vested in the State Board of Health is lacking in any particular, it should be strengthened at the next session of the Legislature.

Division of State into Sanitary Districts. In order to facilitate and make most effective the work of this office, I have considered it advisable, as soon as appropriation will allow, to divide the State into several sanitary districts, each under the direct supervision of a resident engineer who will be responsible for the condition of affairs in his own territory. These men will keep under their constant supervision the operation of all water supply and sewerage systems within their districts, and send in all necessary samples; they will be in close touch both with headquarters and with each town and locality, and thus the execution of orders from the main office will be greatly simplified, while minor matters can be settled directly by them; sanitary surveys of all towns can be taken up more systematically and thoroughly, and less expensively, than through the headquarters department; stream pollution can be closely watched; and construction work on water supply and sewerage systems can be followed, to see that the work is done in accordance with the plans that have been approved.

In the accomplishment of similar amounts of field work, this proposed arrangement should prove considerably less expensive than one which necessitates for each trip travelling expenses from Baltimore, living expenses, and lost time which would mean increased force. It would, of course, be unnecessary to pay the resident engineer's living expenses while at his own headquarters.

Division of the State into sanitary districts for the execution of the work of this bureau will not interfere in any way with the health officer system at present in vogue, nor with any other method of sanitary control which in the future may be insti-

tuted. The engineer and the health official can work to mutual advantage, giving each other aid in such cases as might demand the special knowledge of either.

As far as at present can be judged, it seems not unreasonable to ask for sufficient appropriation to divide the State into four sections, possibly as follows:

Western Division, containing Garrett, Allegany, Washington and Frederick Counties, with a total area of 2,239 sq. mi. and a population of 184,756 in 1910.

Northern Division, containing Carroll, Howard, Anne Arundel, Baltimore, Harford and Cecil Counties, with a total area of 2,586 sq. mi. and a population of 263,716 in 1910.

Southern Division, containing Montgomery, Prince George's, Charles, St. Mary's and Calvert Counties, with a total area of 2,045 sq. mi. and a population of 111,977 in 1910.

Eastern Division, containing Kent, Queen Anne's, Caroline, Talbot, Dorchester, Wicomico, Somerset and Worcester Counties, with a total area of 2,991 sq. mi. and a population of 176,412 in 1910.

The Northern Division can best be handled from Baltimore, and it would probably be necessary to assign at least two men to the work, from the beginning. The other divisions could probably be taken care of each by one man, at first. While the Southern Division is smallest in both area and population, it contains the thickly settled and growing suburban territory around the District of Columbia which needs a great deal of attention.

Typhoid Fever Comparisons. Maryland is one of the States of the Union in which the typhoid fever death rate is high. Registration is not complete in all states and figures are not available for all, but there were, in 1911, 23 states embraced within the "registration area" of the United States, and these contained 63.1 per cent. of the total population of the country. In them the deaths from various causes are recorded, and therefore comparisons can be made. Table 2 shows the death rates, per 1,000 of population, from all causes, in the registration states from 1900 to 1911, inclusive; and Table 3 gives the death rates, per 100,000 inhabitants, from typhoid fever, for the same states during the same period.

TABLE 2—DEATH RATE PER 1,000 OF POPULATION IN REGISTRATION STATES OF THE UNITED STATES, 1900 TO 1911, INCLUSIVE, FROM ALL CAUSES.*

STATE	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
California.....	.....	.....	.....	.....	.....	.....	14.11	14.63	14.11	13.43	13.52	13.68
Colorado.....	.....	.....	.....	.....	.....	.....	13.99	15.27	14.53	14.19	13.76	12.93
Connecticut.....	18.02	15.97	15.11	15.92	15.59	16.05	16.17	16.54	14.84	15.01	15.64	15.40
Indiana.....	14.19	13.85	12.89	12.37	13.81	13.17	12.84	12.95	12.76	12.85	13.48	12.93
Kentucky.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.18
Maine.....	17.11	16.03	15.35	15.81	16.35	16.04	16.03	16.37	15.68	15.57	17.12	16.08
Maryland.....	.....	.....	.....	.....	.....	.....	15.99	16.44	15.81	15.49	16.03	15.82
Massachusetts.....	18.25	16.94	16.47	16.71	16.34	16.76	16.33	17.04	15.93	15.44	16.06	15.34
Michigan.....	14.03	13.42	12.67	13.23	13.59	13.38	14.03	13.60	13.40	13.08	14.14	13.25
Minnesota.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.89	10.47
Missouri.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.08
Montana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.56	10.22
New Hampshire.....	18.55	16.82	16.00	16.69	16.21	17.26	17.70	17.57	16.76	16.91	17.29	17.07
New Jersey.....	17.75	16.42	15.79	15.68	16.91	15.82	15.95	16.12	14.85	14.68	15.47	14.66
New York.....	18.21	17.70	16.43	16.47	17.96	17.01	16.94	17.25	15.91	15.66	16.13	15.54
North Carolina.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18.66	18.32
Ohio.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12.86	13.69	13.10
Pennsylvania.....	.....	.....	.....	.....	.....	.....	16.02	15.93	15.13	14.70	15.57	14.21
Rhode Island.....	20.46	18.13	17.71	18.80	17.24	17.10	17.38	17.78	15.92	15.57	17.07	15.54
South Dakota.....	.....	.....	.....	.....	.....	.....	8.46	9.07	9.19	8.54	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.85	10.28
Vermont.....	16.56	16.57	15.03	16.20	15.99	16.98	16.71	16.16	15.94	15.72	16.01	15.84
Washington.....	.....	.....	.....	.....	.....	.....	.....	.....	9.30	9.80	9.96	8.90
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	11.75	11.78	12.00	11.46

*Table compiled from Government Records.

TABLE 3—DEATH RATE PER 100,000 OF POPULATION IN REGISTRATION STATES OF THE UNITED STATES, 1900 TO 1911, INCLUSIVE, FROM TYPHOID FEVER.*

STATE	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
California.....	.....	.....	.....	.....	.....	.....	32.0	25.6	24.1	19.4	19.2	17.3
Colorado.....	.....	.....	.....	.....	.....	.....	49.3	55.1	40.4	31.0	41.9	30.3
Connecticut.....	32.0	29.9	21.5	21.4	16.9	21.1	21.4	19.8	17.8	13.9	14.7	13.5
Indiana.....	51.1	47.0	49.5	41.3	41.6	38.3	37.0	35.8	34.1	32.8	34.0	26.7
Kentucky.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46.3
Maine.....	28.2	32.2	24.4	32.3	35.0	22.1	18.2	17.4	20.4	14.6	20.3	18.0
Maryland.....	.....	.....	.....	.....	.....	.....	41.2	41.1	39.7	32.6	40.7	37.5
Massachusetts.....	22.0	19.9	18.5	18.1	16.7	18.0	15.9	12.6	16.1	11.8	12.4	9.0
Michigan.....	36.5	26.3	24.5	24.1	25.2	23.9	27.3	22.2	25.1	23.7	23.7	19.1
Minnesota.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32.1	13.5
Missouri.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31.9
Montana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39.9	20.4
New Hampshire.....	22.1	18.9	18.3	24.7	18.8	15.7	21.5	12.2	19.4	12.6	10.7	14.6
New Jersey.....	22.0	19.5	21.6	19.5	18.6	16.4	16.5	18.3	14.3	11.2	14.5	12.0
New York.....	27.6	24.9	23.2	22.2	21.3	19.9	19.2	20.0	16.1	14.9	15.3	14.1
North Carolina.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57.7	70.0
Ohio.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.0	27.5	22.7
Pennsylvania.....	.....	.....	.....	.....	.....	.....	54.8	48.6	33.0	22.7	24.6	21.9
Rhode Island.....	28.7	23.5	20.3	17.6	14.9	17.1	16.4	10.9	12.7	12.0	13.6	9.5
South Dakota.....	.....	.....	.....	.....	.....	.....	20.1	18.1	18.2	17.2	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37.0	19.2
Vermont.....	33.8	28.7	19.1	24.7	29.8	24.6	19.4	10.8	19.2	14.9	14.0	12.3
Washington.....	.....	.....	.....	.....	.....	.....	.....	.....	27.8	28.0	28.0	18.3
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	14.0	14.5	23.3	13.2

*Table compiled from Government Records.

These tables show that, while the total death rate in Maryland is about the same as in other eastern states, notably Connecticut, Maine, Massachusetts, New York, Rhode Island and Vermont, the typhoid fever mortality in Maryland is from two to four times as great as in those states mentioned. In 1911, the rate in Maryland was 37.5, while the rates in the other states varied from 9.0 in Massachusetts to 18.0 in Maine. And it is a fact that Maryland has had almost, if not quite, the highest mortality from typhoid fever in the whole registration area, ever since 1906, the year that the State became a portion of that area. Its rates in 1906 and 1907 were exceeded only by those of Colorado and Pennsylvania; in 1908, only by Colorado; in 1909, only by Indiana, and very slightly at that; in 1910, only by Colorado and North Carolina, the latter having become a registration state during that year; and in 1911, only by North Carolina and Kentucky, which had just entered the registration district. In 1911, the rate in no other state, besides the two just mentioned, approached that in Maryland, the high-rate states of the earlier years having improved their conditions so greatly. More serious, even, than Maryland's humiliating position is the fact that here, in strong contrast with almost all the other registration states, there was no substantial decrease in the typhoid fever death-rate between 1906 and 1911. The comparatively slight improvement shown in 1911 is due almost wholly to the treatment of Baltimore's water supply with hypochlorite of calcium, which was started about the middle of that year.* That the typhoid fever mortality was practically constant in Maryland for twenty years previous to 1911 is evidenced by the rates of 1890 and 1900, which were 45.7 and 44.3, respectively.† Contrast the drop from 45.7 in 1890 to 37.5 in 1911 with the decrease from 45.0 in 1887 to 9.0 in 1911, which took place in Massachusetts.

Turning, for the present, from the comparison of typhoid fever mortality in various states, it will be worth while to compare the prevalence of typhoid fever with other communicable diseases in Maryland. Table 4 gives the number of cases and deaths, during the last five years, for the six most prevalent communicable diseases for which records are available.

*The typhoid mortality in Baltimore was reduced from 42.0 in 1910 to 27.6 in 1911, while the rate in the counties rose considerably during the same period. By continued treatment of the water supply, the Baltimore City rate was reduced to 23.9 in 1912.

†Dr. C. W. G. Rohrer, Acting Chief, Bureau of Communicable Diseases, Maryland State Department of Health, in "Maryland's Annual Typhoid Problem," page 6.

TABLE 4—NUMBER OF CASES AND DEATHS FROM THE SIX MOST PREVALENT REPORTABLE COMMUNICABLE DISEASES IN MARYLAND, FROM 1908 to 1912, INCLUSIVE.*

DISEASE.	CASES.					DEATHS.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Tuberculosis.....	.....	.....	.....	3,119	3,262	2,361	2,402	2,385	2,274	2,289
Typhoid Fever.....	3,073	3,046	4,239	3,181	2,780	530	430	544	503	365
Measles.....	3,942	5,470	2,460	5,282	2,299	80	133	56	122	32
Diphtheria.....	1,490	1,370	1,393	1,824	1,823	184	165	169	163	200
Scarlet Fever.....	1,834	1,044	1,855	1,771	1,358	98	46	71	66	35
Whooping Cough....	593	1,040	1,340	796	849	144	235	303	216	145

*Table compiled from Records of Bureau of Communicable Diseases, Maryland State Department of Health.

This table shows that, in Maryland, there are many more cases of typhoid fever than of any other communicable disease reported, except tuberculosis and measles, and that during some years even these are exceeded by a considerable margin. It also shows that, with the exception of tuberculosis, typhoid fever is the direct cause of many more deaths every year in Maryland than any other communicable disease.

Conditions such as those noted above surely call for the immediate application of remedial measures. In the first place, typhoid fever could be practically wiped out by the universal use of anti-typhoid vaccine. But this is a situation which will not be realized for years to come, if ever; and it will be a particularly difficult one to effect, for immunity is continuous only through repeated applications of the vaccine. In conjunction with the gradual spread of this desirable custom, quicker and but little less effective means should be taken to reduce the prevalence of typhoid fever; and the institution of the most effectual of such preventive measures can be delegated most appropriately to the Bureau of Sanitary Engineering. This is true because the commonest means of conveyance for this disease can be nearly always rendered harmless by the application of principles of sanitation embodied in the construction of engineering works. It is conceded that the greatest factor in the spread of typhoid fever is an impure water supply. Other important causes which may be mentioned are the spread of infection by flies, the consumption of contaminated shellfish, impure milk and other raw food products, and bathing in polluted water; and the infectious condition of all these vehicles, as well as of impure drinking water, is often due to improper disposition of sewage and drainage. The improvement, therefore, of water-

supply and sewerage facilities in Maryland will surely be followed by a decrease in mortality from typhoid fever. But substantial and continuous improvement along these lines throughout the State can be brought about only by means of a system of complete control by the State Board of Health, such as was outlined earlier in this report; and to make this supervision thoroughly effective, and of the greatest value to the citizens, a much larger appropriation than is now available will have to be provided, for reasons already explained.

In order to indicate graphically the typhoid fever death-rates in various registration states which have sanitary engineering divisions in connection with their departments or boards of health, Plate 1 has been prepared. This diagram was constructed from data given in Table 3, and shows that the mortality from typhoid fever is, in such states, not only low but is fast decreasing. There is a remarkably close correspondence in the curves for Massachusetts, Connecticut, New York and New Jersey, in at least three of which state supervision over water supply and sewerage works is strict. The decrease in Pennsylvania, from 54.8 in 1906, when it became a registration state, to 22.7 in 1909, is worthy of particular notice in this connection; for, in 1905, there was a reorganization of the public health service in that state, resulting, among other things, in the formation of an engineering division, backed by a relatively generous appropriation and adequate laws.

It is not intended to convey the impression that all of the improvement in the various states shown on the diagram is due to the activities of their respective sanitary engineering departments, but there is not the least doubt that a very large share can be justly attributed to this cause. The position of Maryland, without a sanitary engineering bureau until 1912, is striking; but there is no reason to believe that, with the passage of proper laws and the granting of an appropriation sufficient for extensive and systematic work on the part of this bureau, the results here will not compare favorably with those accomplished in other states.

In considering the value of an efficient and adequately supported sanitary engineering department to the State, from the standpoint of mortality reduction, typhoid fever alone has been referred to; but it is well known that this is not the only disease transmitted by contaminated water, and the replacement of such a supply by one of good quality is usually accompanied by a decrease in the prevalence of various diarrheal diseases and a particularly marked reduction in the death-rate of children under five years of age. In some cases the lowering of mortality from these causes has been greater even than from

typhoid fever. It has been found, also, that improvements in water supplies have resulted in fewer deaths from a number of diseases not generally considered as water borne.

In 1893, Lowell, Mass., substituted a driven-well supply for one taken from the grossly polluted Merrimack River, and in the same year Lawrence started to filter its supply derived from the same river. In comparing the mortality in these cities, from diseases other than typhoid fever, during the two periods, 1888-1892, and 1894-1898, Mr. Hiram F. Mills, member of the Massachusetts State Board of Health, in an address to the State Inspectors of Health, has the following to say:

"Five of these diseases which we have not been accustomed to regard as water borne—viz., measles, scarlet fever, diphtheria and croup, consumption and pneumonia—show consistent decreases in these two cities with purified drinking water by percentages greater than those shown in the State at large, which average more than half as great as the decreases in typhoid fever. The actual decrease in the number of deaths from the first five-year period to the second in Lowell and Lawrence from these five diseases was 1.5 times as great as in typhoid fever. The decrease in deaths from consumption was 50 per cent. of the decrease in typhoid fever; the decrease in pneumonia was 21 per cent.; in diphtheria, 60 per cent.; and in measles and scarlet fever together, 18 per cent. of the decrease in typhoid fever.

"The decrease in deaths from all diseases in Lowell and Lawrence in the two periods, due principally to the improvement of their water supplies, was 1.7 times as great as the decrease in deaths from typhoid fever."

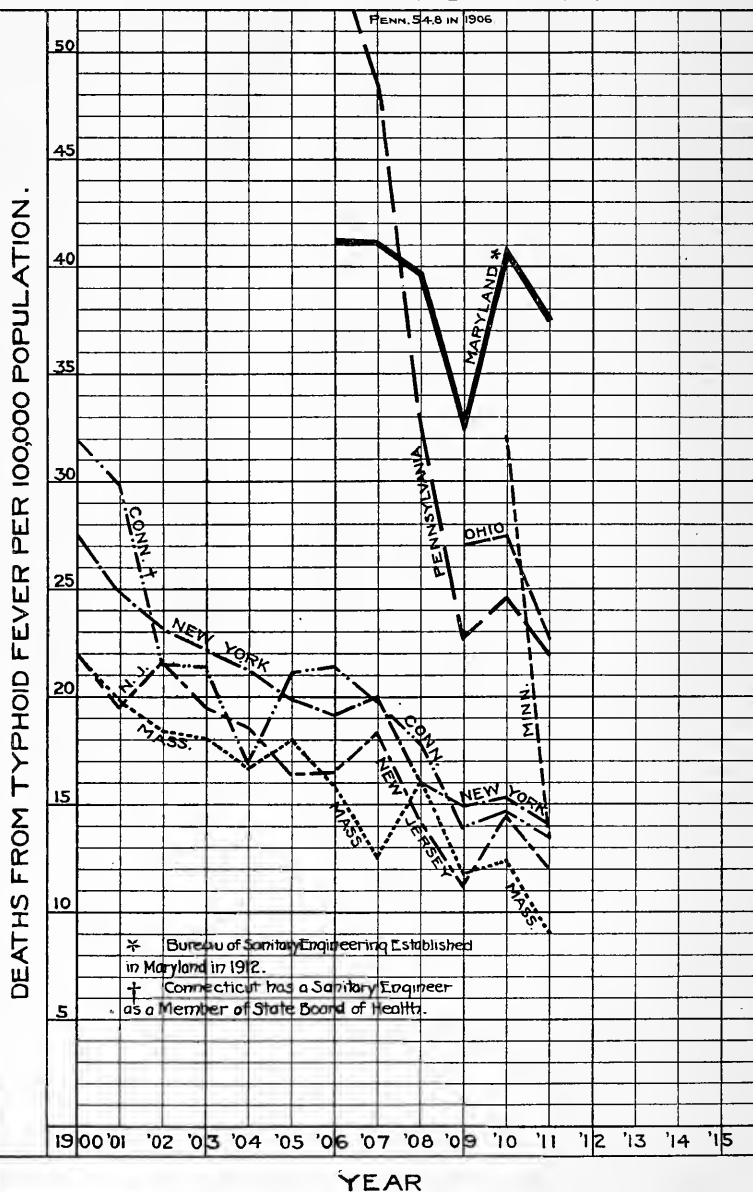
The fact that substitution of a pure for a polluted water supply results in a reduction of the general death rate, usually by an amount much greater than would be brought about by the decrease in typhoid fever alone, is shown by Mr. Hazen in a paper presented at the International Engineering Congress in St. Louis. Through an examination of the records of five cities, before and after the introduction of improved water supplies, he found that, for every person saved from death by typhoid fever, more than three additional deaths were prevented from other causes.

In an estimate of the value of a sanitary engineering department to any state, the reduction in the general death rate must be considered as a factor of the greatest importance. Nothing has been said concerning the financial aspect of this feature, but few can fail to appreciate the saving to a community following from mortality decrease, and it can be proven, by cold figures, that the most generous appropriations for sanitary work by the state will pay in cash, as well as in other respects.

Very respectfully,

ROBERT B. MORSE,
Chief, Bureau of Sanitary Engineering.

PLATE I - DEATH RATES FROM TYPHOID FEVER IN VARIOUS REGISTRATION STATES HAVING SANITARY ENGINEERING DEPARTMENTS, IN COMPARISON WITH THE RATE IN MARYLAND.



Inspector's Report for 1912.

JANUARY.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Highlandtown.....	..	1	..
Pennsylvania Avenue.....	..	2	..
Union Stock Yards.....	..	..	5
	<hr/> 0	<hr/> 3	<hr/> 5

<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	1	..
Under age and weight.....	..	2	..
Bruised and unfit for food.....	..	..	5
	<hr/> 0	<hr/> 3	<hr/> 5

Total number of condemnations: 8.

FEBRUARY.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Highlandtown.....	..	5	..
	<hr/> 0	<hr/> 5	<hr/> 0

<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	3	..
Under age and weight.....	..	2	..
	<hr/> 0	<hr/> 5	<hr/> 0

Total number of condemnations: 5.

MARCH.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Pennsylvania Avenue.....	..	2	..
Highlandtown.....	..	1	..
Paca Street.....	..	1	..
	<hr/> 0	<hr/> 4	<hr/> 0

<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	3	..
Under age and weight.....	..	1	..
	<hr/> 0	<hr/> 4	<hr/> 0

Total number of condemnations: 4.

APRIL.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Frederick Road.....	..	2	..
Highlandtown.....	..	2	..
Jenkins Lane.....	..	1	..
Light Street.....	..	1	..
Union Stock Yards.....	..	1	..
	<hr/>	<hr/>	<hr/>
	0	7	0
 <i>Disease.</i>	 <i>Hogs.</i>	 <i>Cattle.</i>	 <i>Sheep.</i>
Under age and weight.....	..	3	..
Tuberculosis.....	..	3	..
Lump-Jaw.....	..	1	..
	<hr/>	<hr/>	<hr/>
	0	7	0

Total number of condemnations: 7.

MAY.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Union Stock Yards.....	..	2	..
Pennsylvania Avenue.....	..	2	..
Jenkins Lane.....	..	1	..
Highlandtown.....	2	1	..
	<hr/>	<hr/>	<hr/>
	2	6	0
 <i>Disease.</i>	 <i>Hogs.</i>	 <i>Cattle.</i>	 <i>Sheep.</i>
Bruised and unfit for food.....	..	1	..
Under age and weight.....	..	2	..
Lump-Jaw.....	..	1	..
Tuberculosis .....	..	2	..
Cholera.....	2	..	..
	<hr/>	<hr/>	<hr/>
	2	6	0

Total number of condemnations: 8.

JUNE.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Highlandtown.....	..	3	32
Union Stock Yards.....	..	2	..
Frederick Road.....	..	1	..
	<hr/>	<hr/>	<hr/>
	0	6	32
 <i>Disease.</i>	 <i>Hogs.</i>	 <i>Cattle.</i>	 <i>Sheep.</i>
Spoiled and unfit for food.....	..	..	32
Under age and weight.....	..	2	..
Bruised and unfit for food.....	..	2	..
Tuberculosis.....	..	2	..
	<hr/>	<hr/>	<hr/>
	0	6	32

Total number of condemnations: 38.

JULY.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Light Street.....	..	1	..
	<hr/> 0	<hr/> 1	<hr/> 0
<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	1	..
	<hr/> 0	<hr/> 1	<hr/> 0

One cow, both hips broken, hauled to place of slaughter after hips were broken two weeks—Frederick Road.

Total number of condemnations: 2.

AUGUST.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Highlandtown.....	..	2	..
Union Stock Yards.....	..	..	5
Jenkins Lane.....	..	2	..
	<hr/> 0	<hr/> 4	<hr/> 5
<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	3	..
Under age and weight.....	..	1	..
Bruised and unfit for food.....	..	..	5
	<hr/> 0	<hr/> 4	<hr/> 5

Total number of condemnations: 9.

Special Inspection—Condemned: 350 lbs. of hams and shoulders.

SEPTEMBER.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Union Stock Yards.....	..	..	5
Frederick Road.....	..	2	..
Arlington.....	..	1	..
	<hr/> 0	<hr/> 3	<hr/> 5
<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Bruised and unfit for food.....	..	..	5
Tuberculosis.....	..	3	..
	<hr/> 0	<hr/> 3	<hr/> 5

Total number of condemnations: 8.

Condemned—250 lbs. salted meat, Highlandtown, spoiled; 4 heads, 4 livers, 4 tongues, Highlandtown, diseased.

OCTOBER.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Union Stock Yards.....	..	..	5
Frederick Road.....	..	1	..
Balto. Butchers' Abattoir.....	..	2	..
Highlandtown.....	1	..	..
	<hr/> 1	<hr/> 3	<hr/> 5

<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Bruised and unfit for food.....	..	..	5
Tuberculosis.....	..	1	..
Under age and weight.....	..	2	..
Cholera.....	1	..	..
	<hr/> 1	<hr/> 3	<hr/> 5

Total number of condemnations: 9.

October 10, 1912.

Dr. Marshall Langton Price,
Secretary, State Department of Health,
Baltimore, Maryland.

My Dear Sir: In accordance with the instructions received from Dr. Frederic V. Beitler, Acting Secretary, I investigated the conditions on which a certain bull was sold by Amos Martin, a farmer, to the McCarter's Butchers. This investigation was made on the 22nd of July, and in consequence there was no opportunity for me to make any inspection of any part of the carcass. I was able, however, to question a large number of people who had seen the carcass, and so far as I could ascertain there was evidence in the lungs of some healed tuberculosis, but no further indications. I, therefore, do not believe that this animal was unfit for food, or that any harm would have been done had the meat been put on the market.

The McCarters claim that they did not sell any of this meat for food, a statement which is contradicted by some other persons. In view of the above fact, I do not think that it makes much difference whether the McCarters are telling the truth or not, and I, therefore, advise that the matter be allowed to drop. Attached please find the letter of Dr. J. E. Pitsnogle.

In explanation in regard to the opinion expressed above I may say that both the officer, Mr. G. W. Freidinger and the States Attorney, Mr. Wolfinger, who had seen the carcass, were unable to detect any signs of adhesion, and they also know that the larger part of the carcass was destroyed.

In addition to the above work, I inspected the following slaughter houses, in which I found in fairly good condition:

Albert Brothers, Franklin Street (West).

Warner and Downs, Johnothan Street.

Isach Hartle, East Franklin Street.

Frank Harm, Cavetown Pike.

Charles McCammon, North Potomae Street.

Jacob Johnson and Bro., West Washington Street.

Brewer Brothers. West Washington Street.

Thos. McCarter, High Street.

Loshbaugh, High Street.

Very truly yours.

CHARLES N. MITTEN,

Inspector, State Department of Health.

NOVEMBER.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Highlandtown.....	1	2	..
Union Stock Yards.....	..	..	5
	<hr/> 1	<hr/> 2	<hr/> 5
<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Unable to walk to place of slaughter.....	..	1	..
Bruised and unfit for food.....	..	..	5
Under age and weight.....	..	1	..
Cholera.....	1	..	..
	<hr/> 1	<hr/> 2	<hr/> 5

Total number of condemnations: 8.

DECEMBER.

CONDEMNATIONS.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Frederick Road.....	..	2	..
Union Stock Yards.....	..	..	5
Highlandtown.....	..	1	..
	<hr/> 0	<hr/> 3	<hr/> 5
<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	1	..
Tuberculosis, unable to walk.....	..	1	..
Bruised and unfit for food.....	..	..	5
Under age and weight.....	..	1	..
	<hr/> 0	<hr/> 3	<hr/> 5

Total number of condemnations: 8.

CONDEMNATIONS FOR THE YEAR ENDING DECEMBER, 31, 1912.

<i>Place.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Highlandtown.....	4	18	32
Pennsylvania Avenue.....	..	6	..
Union Stock Yards.....	..	5	30
Jenkins Avenue.....	..	4	..
Paca Street.....	..	1	..
Frederick Road.....	..	8	..
Light Street.....	..	2	..
Arlington.....	..	1	..
Balto. Butchers' Abattoir.....	..	2	..
Totals.....	4	47	62
Total for the year: 113.			

<i>Disease.</i>	<i>Hogs.</i>	<i>Cattle.</i>	<i>Sheep.</i>
Tuberculosis.....	..	23	..
Tuberculosis, unable to walk.....	..	1	..
Under age and weight.....	..	17	..
Bruised and unfit for food.....	..	3	30
Lump-Jaw.....	..	2	..
Cholera.....	4	..	..
Spoiled and unfit for food.....	..	..	32
Unable to walk to place of slaughter.....	..	1	..
Totals.....	4	47	62

Condemned—350 lbs. of hams and shoulders; Highlandtown, 250 lbs. salted meat, spoiled; Highlandtown, 4 heads, 4 livers, 4 tongues, diseased; Frederick Road, 1 cow, both hips broken, hauled to place of slaughter after hips were broken two weeks.

Total for the year: 113.

Chief Clerk's Report for 1912.

Number of letters written (Regular Correspondence).....	11,740
Number of Multigraphed sheets (Including 384 forms and 308 electro-types).....	247,770
Number of second-class packages.....	13,210
Number of birth certificates filed.....	13,499
Number of death certificates filed.....	10,720
Typewritten sheets.....	4,042
Miscellaneous Reports sent out.....	16,038
Circular letters.....	7,016
Duplicate Immigration cards.....	111
Reports sent to physicians.....	2,686
Certificates of qualification issued to midwives.....	71
Certificates of registration issued to midwives.....	44
Certified copies of death issued.....	46
Certified copies of birth issued.....	6
(Including 72 Searches.)	
Births filed and not reported.....	414
Deaths filed and not reported.....	179
Postal cards sent to County and Town Health Officers.....	152
Disinfection sheets.....	232
Reports written.....	17
Distribution of Prophylactic supplies issued to Tuberculosis Patients:	
Supplies issued in Crates (Number of Packages).....	1,525
Supplies issued from the State Board of Health (Number of Packages).....	540
Supplies issued in bulk (Not in Packages) to I. V. N. A., H. D., of Baltimore City, Phipps Disp., Etc.:	
Napkins.....	880,400
Sputum Cup Fillers.....	435,800
Disinfectant.....	5,463
Tincups.....	2,040
Pockets.....	300
Books of Information.....	560

Respectfully submitted,

W. N. KIRKMAN,

Chief Clerk.

General Orders.

General Order No. 46—

Relating to the administration of the several bureaus.

General Order No. 47—

Relating to transcripts of deaths for the United States Census Bureau.

General Order No. 48—

Directing Louis L. Judge, Inspector, to proceed to Union Bridge to investigate an alleged nuisance maintained by the Tidewater Portland Cement Co.

General Order No. 49—

Directing John W. Arnold, Inspector to proceed to Union Bridge for the purpose of inspecting the public water supply.

General Order No. 50—

Directing Dr. Wm. Royal Stokes, Chief of the Bureau of Bacteriology to proceed to Chestertown as the representative of the State Department of Health to the Health Conference and Exhibit.

General Order No. 51—

Designating Dr. Wm. Royal Stokes, Chief of the Bureau of Bacteriology as Acting Secretary during the absence of the Secretary.

General Order No. 52—

Relating to the administration of the several Bureaus.

General Order No. 53—

Directing Dr. C. W. G. Rohrer, Acting Chief of the Bureau of Communicable Diseases, to proceed to Baltimore County to investigate an alleged unsanitary nuisance in the vicinity of the Government Reservation at Fort Howard.

General Order No. 54—

Directing Louis L. Judge and John W. Arnold, Inspectors, to proceed to Baltimore County to investigate an alleged unsanitary nuisance in the vicinity of the D. B. Martin Co., Wilkens Ave., and Brunswick Street.

General Order No. 55—

Directing Robt. B. Hopkins, Inspector, to proceed to Baltimore County for the purpose of determining whether the regulations of the State Board of Health concerning the proper disposal of night soil are being carried out in the vicinity of Fort Howard and the region known as Patapsco Neck.

General Order No. 56—

Directing Mr. Robt. B. Morse, Chief of the Bureau of Sanitary Engineering, to proceed to Somerset Heights, Montgomery County, for the purpose of making a sanitary inspection of that place.

General Order No. 57—

Directing Mr. Louis L. Judge, Inspector, to proceed to Rehoboth, Delaware, for the purpose of obtaining samples of water from three suspected artesian wells used by the Young Women's Christian Association.

General Order No. 58—

Directing Mr. Robt. B. Morse, Chief of the Bureau of Sanitary Engineering, to proceed to Takoma Park for the purpose of making a sanitary survey of that place.

General Order No. 59—

Relieving Dr. Wm. Royal Stokes of the duties of Acting Secretary.

General Order No. 60—

Directing Robt. B. Hopkins and John W. Arnold, Inspectors, to proceed to Hagerstown for the purpose of inspecting the milk supply of that town.

*General Order No. 61—**Regulations Governing the Use of Night Soil for Fertilizing Growing Vegetables.*

The following regulations are hereby promulgated regarding the use of night soil for fertilizing growing vegetables.

1. The use of night soil for growing vegetables will be allowed when the night soil is mixed with at least an equal volume of lime, earth or inert material and covered with at least two (2) inches of earth.

2. The sprinkling of growing vegetables with night soil or the bringing of such vegetables directly into contact with night soil in any other manner is forbidden.

3. Vegetables grown in violation of these regulations are hereby declared diseased, unsound and unwholesome, and all such vegetables and crops will be condemned and destroyed by an inspector of the State Board of Health, in accordance with the Code of Public General Laws of Maryland, and whosoever shall sell such vegetables or crops in violation of the orders and regulations of the board, or who shall, in any other manner, violate any of the provisions of these regulations, shall be subject to the penalties provided by said laws.

4. These regulations having been passed by the State Board of Health at a regular monthly meeting on July 2nd, 1912, and having been duly promulgated, have the force of law.

By order of the State Board of Health of Maryland.

MARSHALL LANGTON PRICE, M. D.,
Secretary.

6 E. Franklin Street, Baltimore.

July 6th, 1912.

General Order No. 62—

Directing Louis L. Judge, Inspector, to proceed to Westminster for the purpose of examining the milk supply of that town.

General Order No. 63—

Detailing Louis L. Judge as Special Agent of the Department.

*General Order No. 64—**Regulations to Prevent the Spread of Tuberculosis Through the Sputum of Persons Suffering from Pulmonary or Laryngeal Tuberculosis.*

In accordance with the provisions of Section 70 of Article 43 of the Code of Public General Laws of Maryland, the following regulations are hereby promulgated:

1. It shall be the duty of any person suffering from pulmonary or laryngeal tuberculosis, whose case has been duly registered in accordance with the provisions of Chapter 412 of the Acts of the General Assembly of 1904, to carry out and comply with such instructions as regards the disposal of his or her sputum and for otherwise providing for the safety of those about him or her, as may be given by his or her attending physician, in accordance with the provisions of Chapter 399 of the Acts of the General Assembly of 1904.

2. In case any person suffering from pulmonary or laryngeal tuberculosis shall be physically unable to comply with the instructions of his or her attending physician or shall be an infant or *non compos mentis* or otherwise unable to carry out the instructions of his or her physician as provided by Chapter 399 of the Acts of the General Assembly of 1904, it shall be the duty of the nurse, attendant or householder, as the case may be, to see that such instructions are fully complied with.

3. Any person violating the provisions of these regulations will be subject to the penalties provided by Section 70 of said Article 43.

4. These regulations having been passed by the State Board of Health of Maryland at a regular monthly meeting held on September 5th, 1912, and having been duly promulgated, have the force of law.

By order of the State Board of Health,

MARSHALL LANGTON PRICE,
Secretary.

6 E. Franklin Street, Baltimore.

September 5th, 1912.

General Order No. 65—

Designating Dr. Frederic V. Beitler, Chief of the Bureau of Vital Statistics, as Acting Secretary during the absence of the Secretary.

General Order No. 66—

Directing Mr. Harry R. Hall, Assistant Chief of the Bureau of Sanitary Engineering, and Louis L. Judge, Special Agent, to proceed to Towson for the purpose of investigating the typhoid fever outbreak at that place.

General Order No. 67—

Directing Louis L. Judge, Special Agent, to proceed to the spring in the vicinity of Arlington Avenue and Grant Street, Baltimore County, for the purpose of taking samples of water from the said spring.

General Order No. 68—

Directing Dr. C. W. G. Rohrer, Acting Chief of the Bureau of Communicable Diseases, to proceed to Melvale, Baltimore County, for the purpose of making a sanitary survey of the Industrial School for Colored Girls.

General Order No. 69—

Directing Dr. C. W. G. Rohrer, Acting Chief of the Bureau of Communicable Diseases, to proceed to Towson, Baltimore County, for the purpose of completing the investigation of the typhoid fever outbreak at that place.

General Order No. 70—

Directing Mr. Harry R. Hall, Assistant Chief of the Bureau of Sanitary Engineering, to proceed to Hagerstown, Washington County, Md., for the purpose of instructing the Washington County Water Co. as to the best means of treating the water from Antietam Creek before being supplied by the said Company to residents of Washington County.

General Order No. 71—

Directing Chas. N. Mitten, Inspector, to proceed to Hagerstown, Washington County, Md., for the purpose of investigating the sale of tubercular meat from the several butchers in Hagerstown.

General Order No. 72—

Relating to the administration of the several bureaus.

General Order No. 73—

Directing Dr. C. W. G. Rohrer, Acting Chief of the Bureau of Communicable Diseases, to proceed to Frederick, Md., for the purpose of investigating the typhoid fever outbreak at that place.

General Order No. 74—

Relating to the administration of the several bureaus.

General Order No. 75—

1. Information having been filed at this office that certain unwholesome articles of food, to wit: oysters infected by the discharge of typhoid infected sewage from the U. S. Naval Academy, are being removed from the Severn River and sold or exposed for sale as human food, in violation of Section 128 of Article 43 of the Code of Public General Laws.

2. The dredging or removal of such oysters from any part of the Severn River below the Railroad Bridge of the Annapolis Short Line Railroad, or the sale of such oysters for food or the exposure of such oysters for sale as food, is hereby forbidden until this order shall be revoked under the penalties provided by Sections 126, 128 and 129 of said Article 43.

(Signed)

FREDERIC V. BEITLER,

Acting Secretary, State Department of Health.

3. The Commander of the Oyster Navy is hereby directed to cause the execution of so much of this order as relates to the removal of oysters from the beds in the territory specified.

(Signed)

P. S. GOLDSBOROUGH,

Governor of Maryland.

Prosecutions.

CASE NO. 148.

STATE *vs.* W. J. CATLIN.

Charge—Violation of Article 43, Section 58, Acts of 1904; Chapter 412, Section 34-I, in failure to report to the Secretary of the State Board of Health case of pulmonary tuberculosis under his professional care on or about September 14, 1910, and on divers days thereafter.

Finding—Case outlawed through expiration of time limit.

CASE NO. 149.

STATE *vs.* WILLIAM J. HILTON.

Charge—Controlling, directing or having charge of the interment, entombment, removal or other disposition of the body of Rose Ann Nichols, a deceased person, without having obtained a burial permit from the registrar or sub-registrar of the district where the said deceased person died, as required by law. In violation of Section 18 of Article 43, Code of Public General Laws of Maryland. This at Montgomery County, Md., on or about February 1, 1912.

Warrant—Dr. Beitler, April 23, 1912. *Justice*—Joseph Reading. *Court*—Justice. *Trial*—April 24, 1912. *Plea*—Guilty. *Finding*—Guilty. *Sentence*—\$10.00.

CASE NO. 152.

STATE *vs.* JOHN C. WOLFORD.

Charge—Controlling, directing or having charge of the interment, entombment, removal or other disposition of the body of Herman Robinette, a deceased person, without having obtained a burial permit from the registrar or sub-registrar of the district where the said deceased person died, as required by law. In violation of Section 18 of Article 43, Code of Public General Laws of Maryland. This at Cumberland, Allegany Co., Md., on or about May 1, 1912.

Warrant—Dr. Harrington, June 29, 1912. *Justice*—J. B. Humbird. *Finding*—Pending.

CASE NO. 153.

STATE *vs.* H. M. PIERSON.

Charge—Controlling, directing or having charge of the interment, entombment, removal or other disposition of the body of Victor Camillo, a deceased person, without previously having obtained a burial permit from the registrar or sub-registrar of the district where the said deceased person died, as required by law. In violation of Section 18 of Article 43, Code of Public General Laws of Maryland. This at or near North East, Cecil Co., Md., on or about December 6, 1911.

Warrant—Dr. Hopkins, June 29, 1912. *Justice*—Levi O. Cameron. *Court*—Justice. *Trial*—July 3, 1912. *Finding*—Not guilty; (Confessed).

CASE NO. 170.

STATE *vs.* R. G. CHANEY & R. F. SUITE.

(Trading as Chaney & Suite, Undertakers, Annapolis, Md.)

Charge—Interring or removing or otherwise disposing of the body of Eugene J. Higgins, a deceased person, without having obtained the burial, removal or disinterment permit from the local or deputy local registrar of the registration district where the said deceased person died, as provided by law. In violation of Section 18, Chapter 696, of the Acts of the General Assembly of 1912. This at Hope Chapel, First Election District, Anne Arundel County, on or about July 1st, 1912.

Warrant—Mr. Judge, Special Agent, August 16, 1912. *Justice*—Dennis Claude. *Finding*—Pending.

CASE NO. 171.

STATE *vs.* R. G. CHANEY & R. F. SUITE.

(Trading as Chaney & Suite, Undertakers, Annapolis, Md.)

Charge—Interring or removing or otherwise disposing of the body of Martha Juliet Floyd, a deceased person, without having obtained the burial, removal or disinterment permit from the local or deputy local registrar of the registration district where the said deceased person died, as provided by law. In violation of Section 18, Chapter 696, of the Acts of the General Assembly of 1912. This at Hope Chapel, First Election District, Anne Arundel County, Md., on or about July 1st, 1912.

Warrant—Mr. Judge, Special Agent, August 16, 1912. *Justice*—Dennis Claude. *Finding*—Pending.

CASE NO. 172.

STATE *vs.* EVA BEALL.

Charge—Carrying about children or others affected with certain infectious diseases, to wit: whooping cough or willfully introducing or permitting children under her care to attend any school, theater, church or any public place. In violation of Section 34, Article 43, Code of Public General Laws of Maryland. This at Mitchellville, Prince George's Co., Md., on or about July 19, 1912.

Finding—No warrant sworn out, travestier having left the State.

CASE NO. 175.

STATE *vs.* BEN HURLEY.

Charge—Interring or removing or otherwise disposing of the body of the child of Ben and Birdey Hurley, a deceased person, without having obtained the burial, removal or disinterment permit from the local or deputy registrar of the registration district where the said deceased person died, as provided by law. In violation of Section 18, Chapter 696, of the Acts of the General Assembly of 1912. This at Cambridge, Md., on or about July 29, 1912.

Warrant—October 5, 1912. *Justice*—Jones. *Court*—Justice. *Trial*—October 12, 1912. *Plea*—Guilty. *Finding*—Guilty. *Sentence*—Convicted; sentence suspended.

REPORT OF THE

CASE NO. 188.

STATE *vs.* DR. THOS. W. KOON.

Charge--Refusing or neglecting to give notice in writing, to the Secretary of the State Board of Health, of the existence of the case of pulmonary or laryngeal tuberculosis existing in the person of Clarence Woolford, as required by law. In violation of Section 58, of Article 43, Code of Public General Laws of Maryland. This at Cumberland, Md., on or about October 2, 1912.

Finding--Not sufficient evidence.

CASE NO. 189.

STATE *vs.* DR. C. B. BOYLE.

Charge--Neglecting or refusing to file a proper certificate of the birth of the child of M. L. Trumpower and Myrtle Trumpower, a mother, of whom he had professional charge at the time of the birth of the said child, within four (4) days after the birth of the said child with the local or deputy local registrar of the registration district in which said child was born. In violation of Section 18, Chapter 696 of the Acts of the General Assembly of 1912. This at Hagerstown, Md., on or about September 29, 1912.

Finding--Not sufficient evidence.

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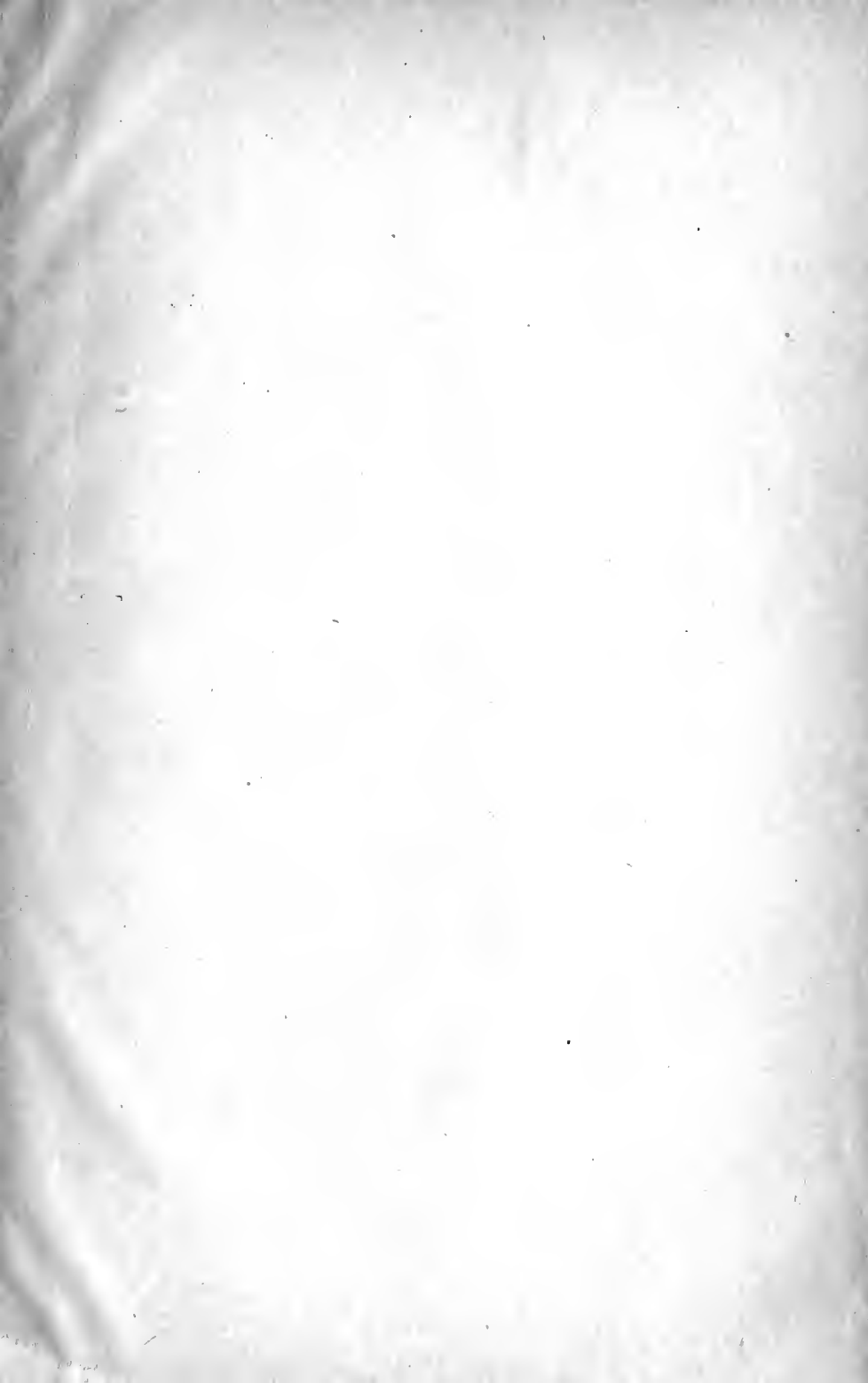
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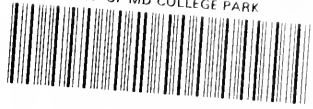






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